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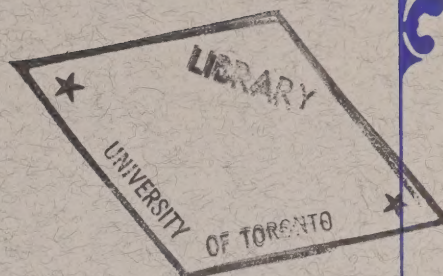
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OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P

(50° N., 145° W.)

Volume 74

18 June — 9 August 1976

Seakem Oceanography Ltd.

INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Victoria, B.C.



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ABSTRACT

Physical, chemical and biological oceanographic observations are made from the weather ship at Ocean Weather Station Papa, and between Esquimalt and Station Papa, on a routine continuing basis. Physical oceanography data only are shown, including profiles obtained with bottle casts, and conductivity-temperature-pressure instruments. Surface observations are also shown.

INTRODUCTION

Canadian operation of Ocean Weather Station P (Latitude $50^{\circ}00'N$, Longitude $145^{\circ}00'W$) was inaugurated in December 1950. The station is occupied primarily to make meteorological observations of the surface and upper air and to provide an air-sea rescue service. The station is manned by two vessels operated by the Marine Services Branch of the Ministry of Transport. They are the CCGS Vancouver and the CCGS Quadra. Each ship remains on station for a period of six weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch.

Bathythermograph observations have been made at Station P since July 1952. A program of more extensive oceanographic observations commenced in August 1956. This was extended in April 1959 by the addition of a series of oceanographic stations along the route to and from Station P and Swiftsure Bank. These stations are known as Line P stations. The number of stations on Line P has been increased twice and now consists of twelve stations (Fig. 1). Bathythermograph observations and surface salinity sample collections, in addition to being made on Line P oceanographic stations, are also made at odd meridians at $40'$, i.e. $139^{\circ}40'W$, $141^{\circ}40'W$, etc. These stations are known as Line P BT stations. Data observed prior to 1968 has been indexed by Collins et al. (1969).

The present record includes hydrographic, continuously sampled STP and surface salinity and temperature data collected from the CCGS Quadra during the period 18 June to 9 August 1976.

All physical oceanographic data have been stored by the Canadian Oceanographic Data Centre (CODC), 615 Booth Street, Ottawa, Ontario, Canada. Requests for these data should be directed to CODC.

Biological and productivity data are published in the Manuscript Report series of the Fisheries Research Board of Canada (FRB), Pacific Biological Station, Nanaimo, British Columbia, Canada. Requests for these data should be directed to FRB.

Marine geochemical data are for the Ocean Chemistry Group, Ocean and Aquatic Sciences, Environment Canada, 512 - 1230 Government Street, Victoria, British Columbia, Canada.

PROGRAM OF OBSERVATIONS FROM CCGS QUADRA, 18 June - 9 August 1976 (P-76-5)
(CODC Ref. No. 15-76-005)

Oceanographic observations were made by Mr. D. Schmitt of Seakem Oceanography Ltd., Victoria, B.C.

En route to Station P, all whole and half stations were occupied and a STP profile made to near bottom or 1500 metres at each whole station.

Samples for salinity, nitrate, nutrient, alkalinity and total CO₂ were taken from the seawater loop at each whole station.

10 minute tarball tows were made at Stations 6, 8, 10, and 12 (the tows at Stations 2 and 4 were cancelled due to rough seas).

The thermosalinograph, surface temperature recorder, and PCO₂ system were run continuously.

Surface salinity samples were collected at half stations 5½ to 12½, and surface bucket salinities at whole stations 1 to 7.

Mechanical BT or XBT's were taken at all Line P and BT stations.

At Station P the oceanographic program was carried out as follows:

I. Physical Oceanography

- 1) Profiles of salinity, temperature and oxygen were obtained from 5 hydrographic stations to near bottom (4200 metres).
- 2) 15 STP profiles to 1500 metres and 26 to 300 metres were obtained.
- 3) BT's were taken every three hours to coincide with meteorological observations, encoded and transmitted according to the IGOS format.
- 4) Salinity samples daily at 0000 hrs GMT from the seawater loop.

II. Marine Geochemistry

- 1) Nutrient samples were collected daily at 0000 hrs GMT and once every hour for a 24 hour period from the seawater loop.
- 2) Salinity samples were collected daily at 0000 hrs GMT.

- 3) Alkalinity and total CO_2 samples every three days from the seawater loop.
- 4) Air CO_2 samples weekly in quadruplicate.
- 5) 7 surface bucket samples for hydrocarbons.
- 6) 7 surface tarball tows.
- 7) 5 seawater C-14 samples were extracted from 45 gallons of seawater taken from the seawater loop. 3 seawater C-13 and 3 air C-13 samples were also taken.
- 8) Hydrocasts for nutrients, alkalinity, total CO_2 , and tritium.
- 9) PCO_2 system in operation for the entire 7 weeks on station with carboys filled with seawater about twice a week for PCO_2 analysis.

III. Biological and Productivity

Samples were obtained as follows:

- 1) 36 - 150 metre vertical plankton hauls.
 2 - 1200 metre vertical plankton hauls.
 1 - 3500 metre vertical plankton haul.

3 groups of surface plankton tows were taken on 3 consecutive nights at sunset.

- 2) 2 profiles for plant pigment and nitrate were obtained and 3 samples were taken from the seawater loop.

En route from Station P, STD casts and tar ball tows were cancelled. Nutrient, nitrate, alkalinity, total CO_2 and surface temperature samples were taken at all whole stations. Salinity samples were also drawn from the loop for all whole and half stations. The PCO_2 system, surface temperature recorder, and thermosalinograph ran continuously. Mechanical XBT's were taken at all whole and half stations.

Observations for Other Agencies

- 1) Marine mammal observations were made by the ship's officers for Mr. I. McAskie, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B. C., Canada.

- 2) Bird observations were made by the ship's officers for Dr. M. Myres, University of Alberta, Calgary, Alberta, Canada and Mr. J. Guiguet, Curator of Birds and Mammals, Provincial Museum, Department of Recreation and Conservation, Victoria, British Columbia, Canada.
- 3) Air CO₂ samples weekly in duplicate for Scripps Institution of Oceanography, La Jolla, San Diego, California, U.S.A.

Data was processed for publication by Ms. M. Sainsbury of Seakem Oceanography Ltd., Victoria, B.C.

OBSERVATIONAL PROCEDURES

Observations for salinity, oxygen and temperature from all hydrographic casts, including the surface, were obtained with Niskin water sample bottles equipped with either Richter and Wiese and/or Yoshino Keiki Co. reversing thermometers. Two protected thermometers were used on all bottles and one unprotected thermometer was used on each bottle at depths of 300 m or greater. The accuracy of protected reversing thermometers is believed to be $\pm 0.02^{\circ}\text{C}$.

The daily surface water temperatures were measured from a bucket sample using a deck thermometer of $\pm 0.1^{\circ}\text{C}$ accuracy. The daily surface salinity samples were obtained from the seawater loop. When the seawater loop was not operational, these samples were obtained with a bucket, and are indicated with a "b" in this data record.

Salinity determinations were made aboard ship with either an Autolab Model 601 Mark III inductive salinometer or a Hytech Model 6220 lab salinometer. Accuracy using duplicate determinations is estimated to be $\pm 0.003^{\circ}/\text{oo}$.

Depth determinations were made using the "depth difference" method described in the U.S.N. Hydrographic Office Publication No. 607 (1955). Depth estimates have an approximate accuracy of ± 5 m for depths less than 1000 m, and $\pm 5\%$ of depth of depths greater than 1000 m.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Carpenter, 1965).

Line P engine intake continuous temperatures were recorded by a Honeywell Elektronik 15 Recorder. The temperature probe is at a depth of approximately 3 metres below the sea surface and the instrument accuracy is believed to be $\pm 0.1^{\circ}\text{C}$.

Each ship is equipped with a Plessey Model 6600-T thermosalinograph which is used, on Line P, for continuous recording of surface temperatures and salinities from the ship's seawater loop. The temperature probe is mounted at the seawater loop intake (approximately 3 metres below the surface) and the salinity probe and recorder are situated in the dry lab. The accuracy of this instrument is believed to be $\pm 0.1^{\circ}\text{C}$ for temperature and $\pm 0.1^{\circ}/\text{oo}$ for salinity.

STP profiles were taken with a Plessey Model 9006 STP system.

COMPUTATIONS

All hydrographic data were processed with the aid of an IBM 370 computer. Reversing thermometer temperature corrections, thermometric depth calculations, and accepted depth from the "depth difference" method were computed. Extraneous thermometric depths caused by thermometer malfunctions are automatically edited and replaced. A Calcomp 565 Offline Plotter was used to plot temperature-salinity and temperature-oxygen vs \log_{10} depth. These plots were used to check the data for errors.

Missing hydrographic data were obtained using a weighted parabola interpolation method (Reiniger and Ross, 1968). These data are indicated with an asterisk in this data record.

Data values which we suspect but which we have included in this data record are indicated with a plus. These data have been removed from punch card and magnetic tape records.

Analog records from the salinity-temperature-pressure instrument have been machine digitized, then replotted using the Calcomp Plotter.

Digitization was continued until original and computer plotted traces were coincident. Temperature and salinity values were listed at standard pressures; integrals (depths, geopotential anomaly, and potential energy anomaly) were computed from the entire array of digitized data.

The headings for the data listings are explained as follows:

PRESS	is pressure (decibars)
TEMP	is temperature (degrees Celsius)
SAL	is salinity (parts per thousand)
DEPTH	is reported in metres
SIGMA-T	is specific gravity anomaly
SVA	is specific volume anomaly
THETA	is potential temperature (degrees Celsius)
SVA (THETA)	is potential specific volume anomaly
DELTA D	is geopotential anomaly (J/kg)
POT EN	is potential energy in units of 10^8 ergs/cm ²
OXY	is the concentration of dissolved oxygen expressed in millilitres per litre
B-V PERIOD	is the Brunt-Vaisala period in minutes

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- Carpenter, J.H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. and Oceanogr.*, 10: 141-143.
- Collins, C.A., R.L. Tripe, D.A. Healey and J. Joergensen, 1969. The time distribution of serial oceanographic data from the Ocean Station P programme. *Fish. Res. Bd. Can. Tech. Rept. No. 106.*
- Reiniger, R.F. and C.K. Ross, 1968. A method of interpolation with application to oceanographic data. *Deep Sea Res.*, 15: 185-193.
- U.S.N. Hydrographic Office, 1955. Instruction manual for oceanographic observations, Publ. No. 607.

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- Figure 4. Composite plot of oxygen vs \log_{10} depth for Station P. P-76-5.
- Figure 5. Salinity difference between hydro data and STP. P-76-5.
- Figure 6. Temperature difference between hydro data and STP. P-76-5.

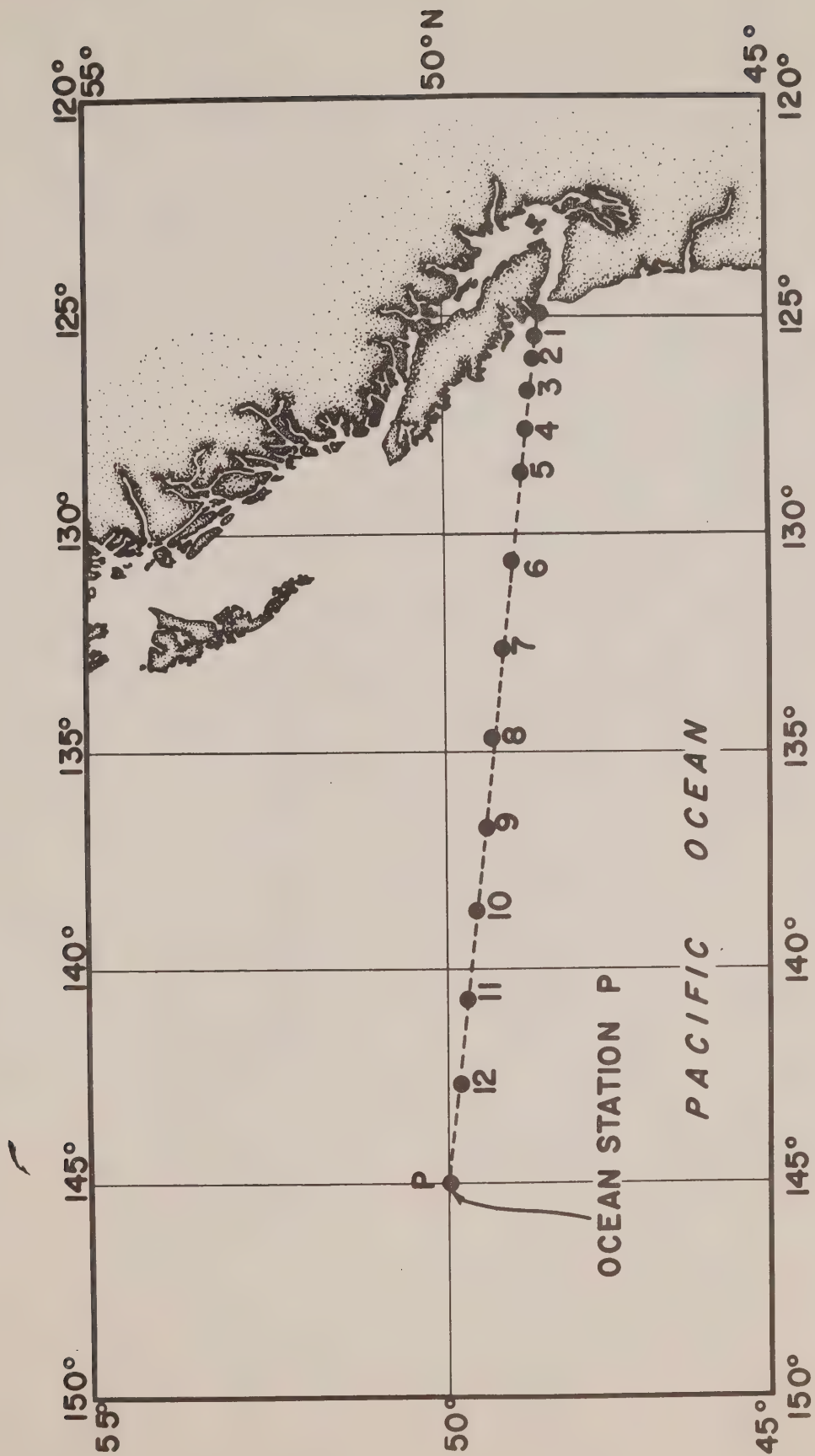


Fig. 1 Chart showing Line P station positions.

Oceanographic Data Obtained on Cruise P-76-5
(CODC Reference No. 15-76-005)

Results of Hydrographic Observations
(P-76-5)

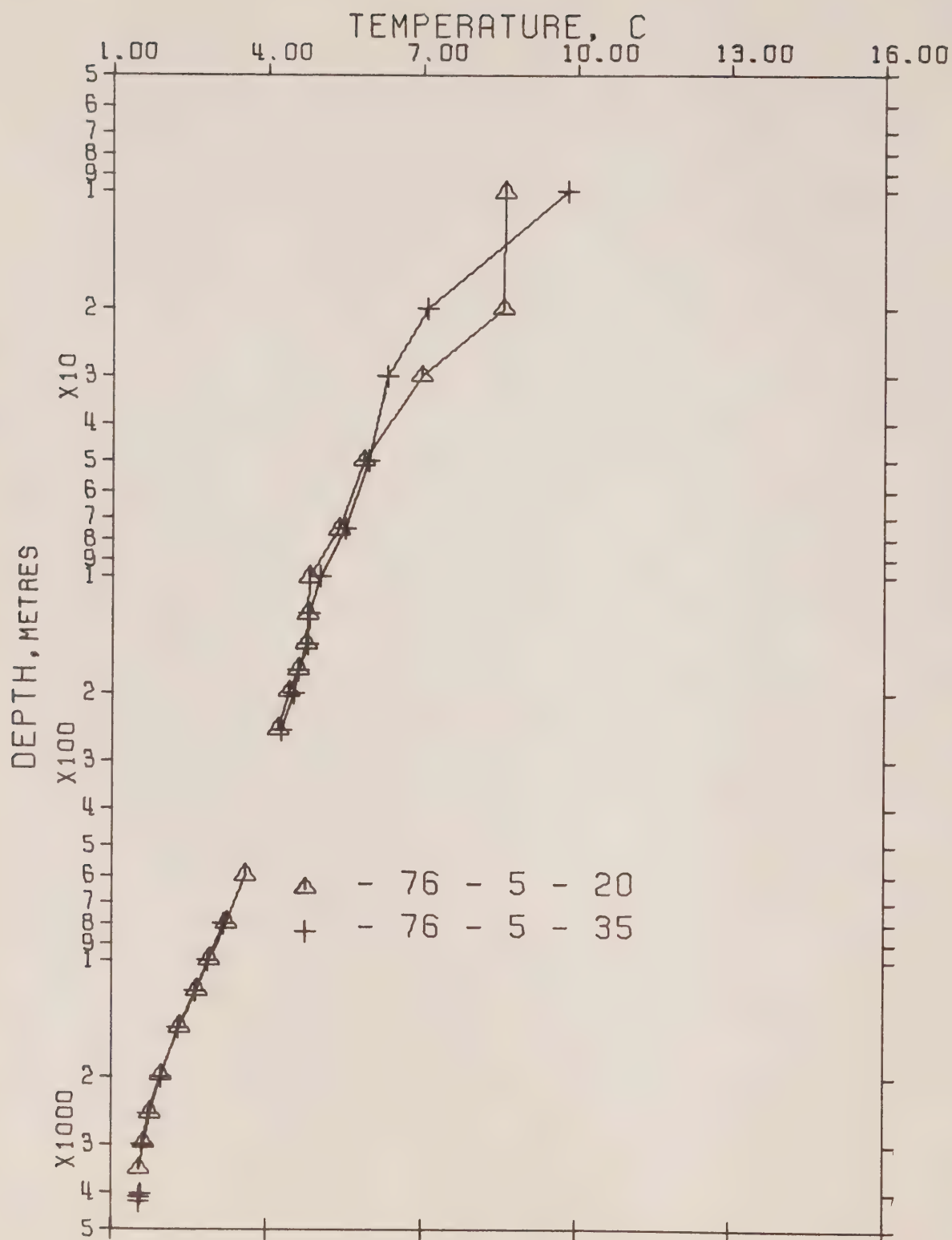


Figure 2. Composite plot of temperature vs \log_{10} depth for Station P. P-76-5.

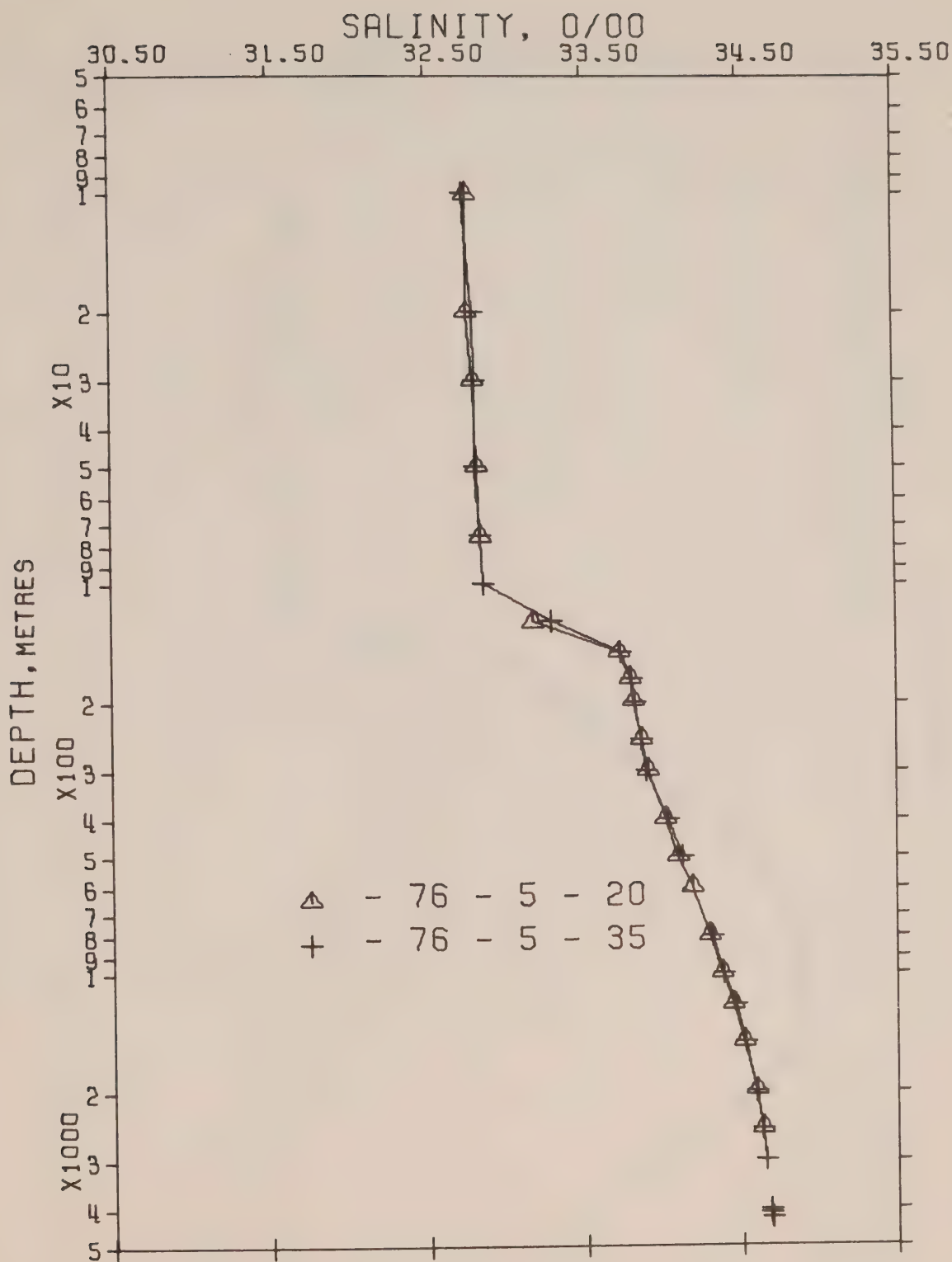


Figure 3. Composite plot of salinity vs \log_{10} depth for Station P.
P-76-5.

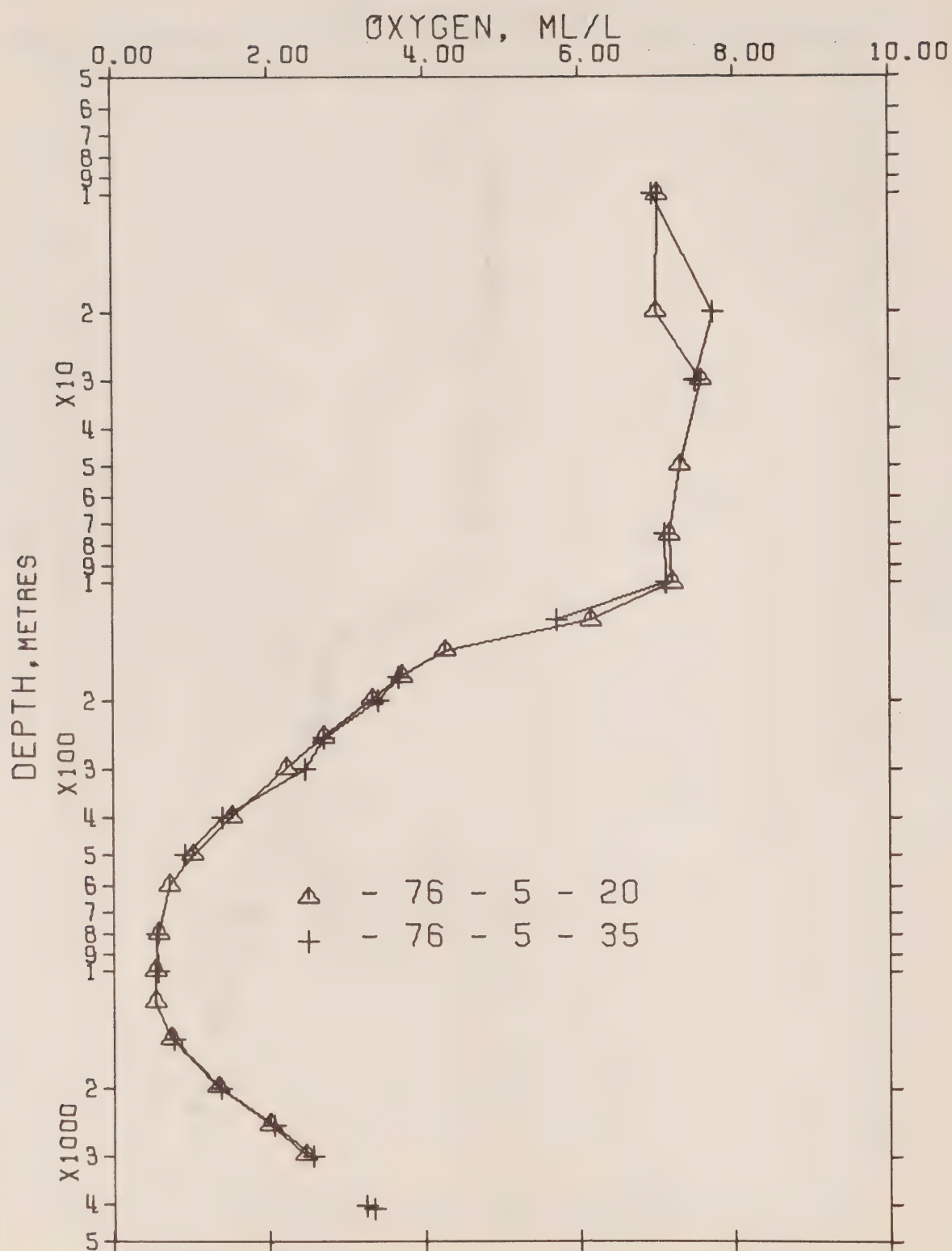
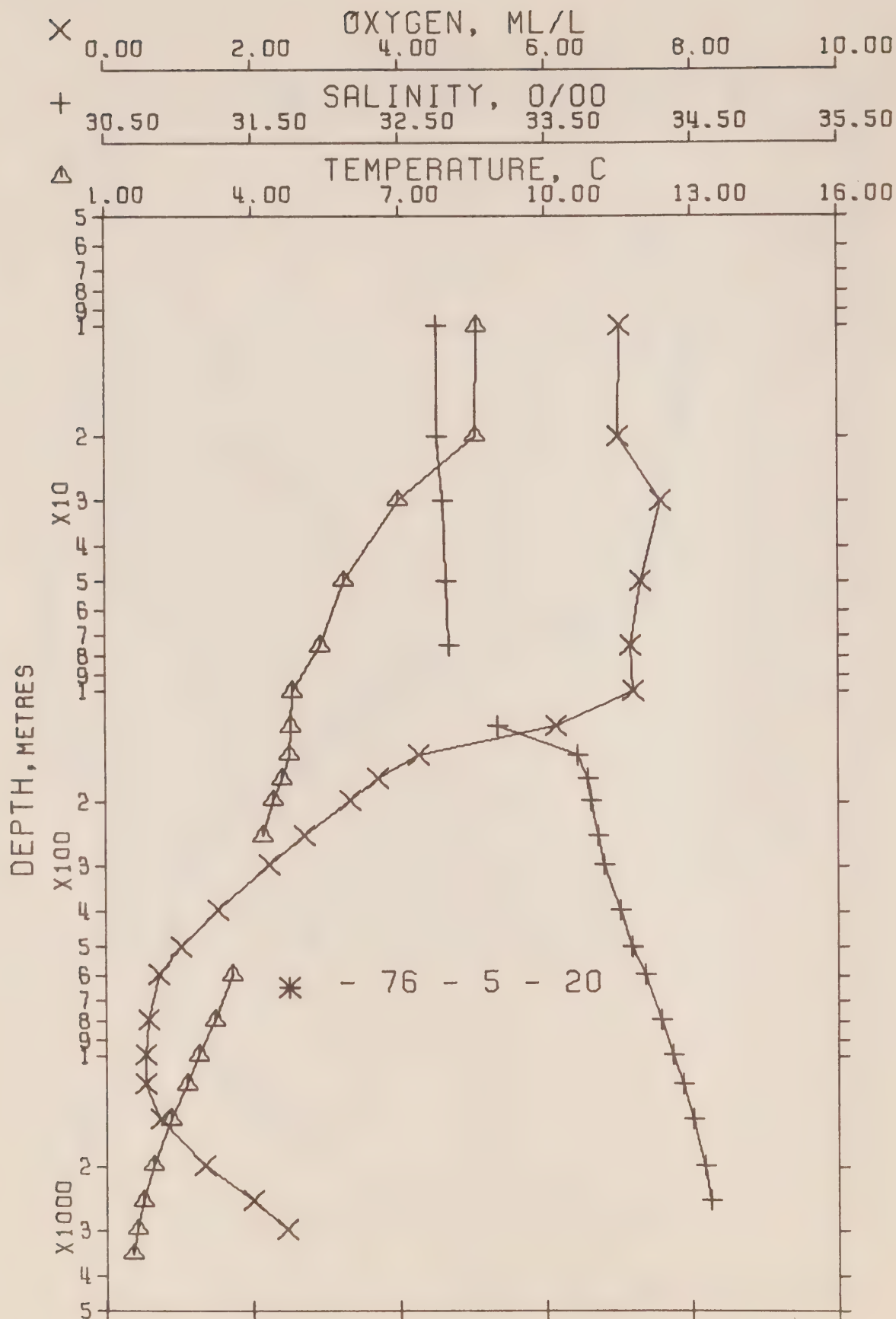


Figure 4. Composite plot of oxygen vs \log_{10} depth for Station P. P-76-5.



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REFERENCE NO. 76- 5- 20

DATE 28/ 6/76

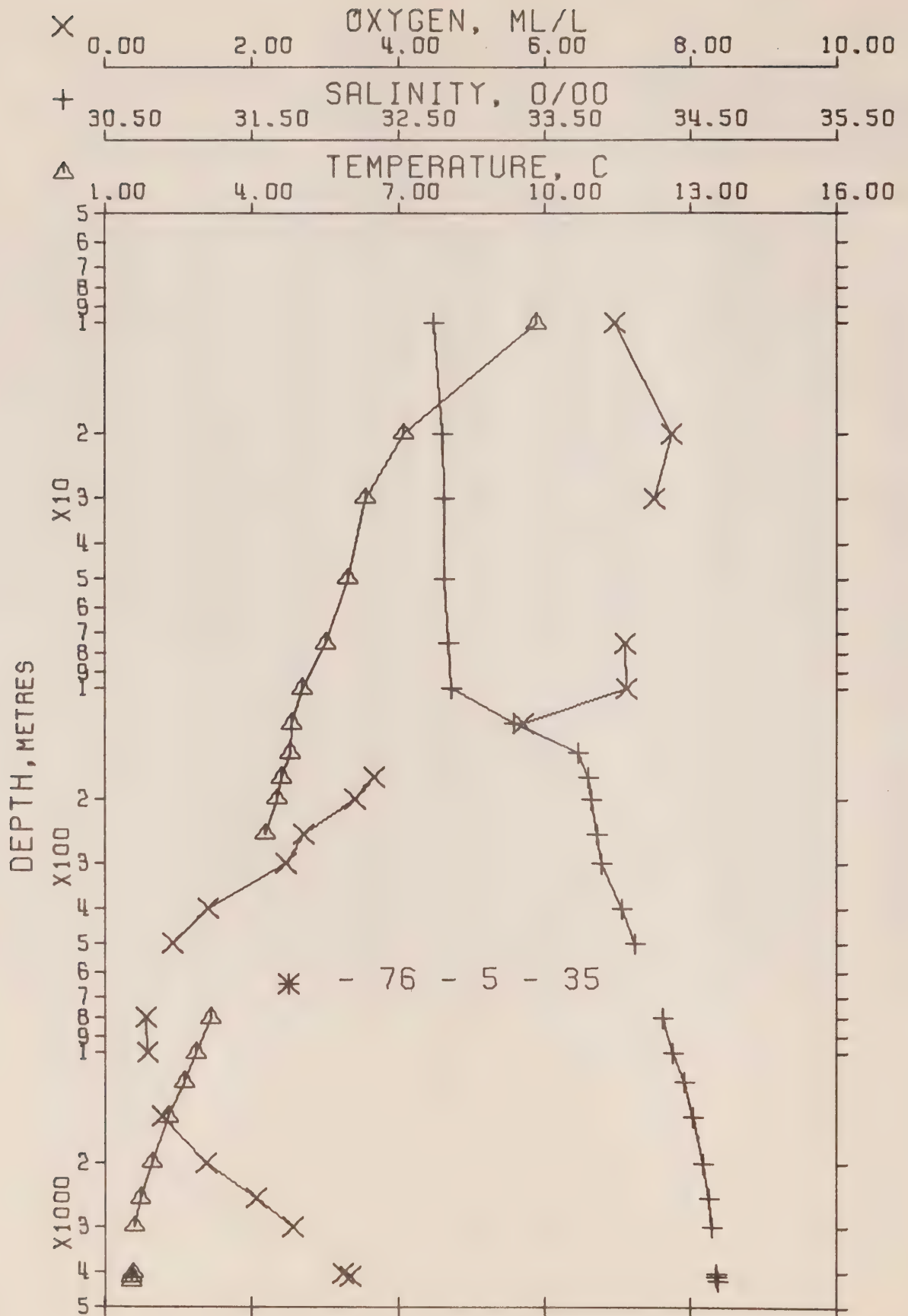
GMT 19.1

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	XY	SOUND
0	8.63	32.760	0	25.447	254.4	8.63	254.1	0.0	0.0	7.01	1482.
10	8.58	32.760	10	25.455	253.8	8.58	253.4	0.26	0.01	7.02	1482.
20	8.55	32.759	20	25.458	253.6	8.55	253.1	0.51	0.05	7.00	1482.
30	6.98	32.802	30	25.716	229.2	6.98	228.5	0.76	0.11	7.58	1477.
50	5.86	32.821	50	25.875	214.3	5.86	213.4	1.20	0.30	7.31	1472.
75	5.37	32.838	75	25.946	207.7	5.36	206.6	1.73	0.64	7.16	1471.
100*	4.83	33.022	99	26.152	188.3	4.83	187.1	2.21	1.07	7.20	1469.
101	4.82	33.026 *	100	26.157	187.8	4.81	186.6	2.23	1.09	7.20	1469.
125*	4.78	33.168	124	26.273	177.0	4.77	175.6	2.67	1.59	6.18	1470.
126	4.78	33.172	125	26.277	176.7	4.77	175.2	2.68	1.61	6.14	1470.
150	4.74	33.721	149	26.710	135.4	4.73	133.5	3.06	2.15	4.27	1471.
175	4.60	33.728	174	26.784	129.1	4.59	127.1	3.39	2.69	3.70	1471.
200	4.41	33.813	199	26.825	125.4	4.40	123.2	3.71	3.30	3.32	1470.
225*	4.31	33.836	225	26.854	122.8	4.29	120.5	4.02	3.96	3.00	1470.
250*	4.21	33.856	248	26.880	120.5	4.19	117.9	4.32	4.70	2.70	1470.
251	4.21	33.857	249	26.881	120.4	4.19	117.8	4.33	4.73	2.69	1470.
300*	4.08	33.904	298	26.932	116.0	4.06	113.0	4.91	6.35	2.23	1471.
301	4.08*	33.905	299	26.933	115.8	4.05	112.9	4.93	6.41	2.22	1471.
400*	3.87	34.012	397	27.039	106.5	3.84	102.7	6.02	10.30	1.53	1472.
401	3.87*	34.013	398	27.040	106.4	3.84	102.7	6.03	10.35	1.52	1472.
500*	3.71	34.089	496	27.117	99.9	3.67	95.3	7.05	15.04	1.03	1473.
502	3.70*	34.091	498	27.118	99.7	3.67	95.2	7.07	15.15	1.02	1473.
600*	3.57	34.176	595	27.199	92.7	3.53	87.5	8.01	20.42	0.73	1474.
603	3.57	34.179	598	27.201	92.5	3.53	87.3	8.04	20.60	0.73	1474.
700*	3.38	34.238	701	27.266	86.8	3.33	81.1	8.91	26.37	0.65	1475.
800*	3.21	34.291	793	27.324	81.8	3.16	75.4	9.75	32.83	0.58	1476.
802	3.21	34.292	795	27.326	81.6	3.15	75.4	9.77	32.99	0.57	1476.
900*	3.04	34.334	897	27.374	77.4	2.98	70.8	10.54	39.69	0.56	1477.
1000*	2.89	34.372	990	27.419	73.6	2.82	66.4	11.30	47.01	0.54	1478.
1002	2.89	34.373	992	27.419	73.5	2.82	66.4	11.31	47.13	0.54	1478.
1200*	2.64	34.435	1188	27.491	67.3	2.55	59.5	12.70	62.77	0.54	1480.
1202	2.64	34.436	1190	27.492	67.2	2.56	59.5	12.72	62.96	0.54	1480.
1500*	2.32	34.507	1484	27.576	59.9	2.22	51.4	14.57	88.42	0.73	1484.
1504	2.32	34.508	1487	27.576	59.9	2.22	51.3	14.59	88.74	0.74	1484.
2000*	1.98	34.585	1977	27.666	52.4	1.84	42.7	17.41	138.85	1.33	1491.
2009	1.97	34.586	1984	27.667	52.3	1.83	42.5	17.45	139.77	1.34	1491.
2500*	1.77	34.633	2468	27.720	48.1	1.59	37.2	19.92	196.48	1.97	1493.
2517	1.76	34.634	2483	27.722	48.0	1.58	37.1	20.00	198.54	1.99	1493.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 35

DATE 12/ 7/76

GMT 17.3

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	9.85	32.724	0	25.225	275.5	9.85	275.3	0.0	0.0	6.91	1487.
10	9.81	32.739	10	25.244	274.0	9.81	273.5	0.28	0.01	5.90	1487.
20	7.10	32.796	20	25.696	231.1	7.10	230.5	0.53	0.05	7.73	1477.
30	6.32	32.811	30	25.810	220.3	6.32	219.7	0.76	0.11	7.49	1474.
50	5.95	32.815	50	25.859	215.8	5.95	215.0	1.19	0.29		1473.
75	5.51	32.836	75	25.928	209.5	5.50	208.4	1.73	0.63	7.10	1471.
100*	5.04	32.859	99	26.001	202.7	5.03	201.5	2.23	1.09	7.12	1470.
101	5.03	32.860	100	26.002	202.5	5.02	201.3	2.25	1.10	7.12	1470.
125*	4.82	33.276	124	26.355	169.3	4.81	167.8	2.71	1.63	5.75	1470.
126	4.81	33.289	125	26.366	168.3	4.80	166.7	2.72	1.64	5.70	1470.
150*	4.79	33.715	149	26.706	136.3	4.78	134.5	3.09	2.16	4.64	1471.
151	4.79	33.732	150	26.719	135.0	4.78	133.2	3.10	2.18	0.0	1471.
175*	4.62	33.794	174	26.787	128.8	4.61	126.3	3.41	2.70	3.49	1471.
176	4.61	33.797	175	26.790	128.5	4.60	126.4	3.43	2.73	3.55	1471.
200*	4.51	33.816	199	26.817	126.2	4.49	123.9	3.73	3.30	3.41	1471.
201	4.50	33.817	200	26.818	126.1	4.49	123.8	3.75	3.34	3.39	1471.
225*	4.39	33.838	225	26.847	123.5	4.37	121.0	4.04	3.98	3.05	1471.
250*	4.28	33.859	243	26.875	121.0	4.26	118.4	4.35	4.72	2.73	1471.
252	4.27	33.860	250	26.877	120.9	4.25	118.2	4.37	4.78	2.71	1471.
300*	4.10	33.886	293	26.915	117.6	4.08	114.6	4.94	6.39	2.47	1471.
302	4.10*	33.887	300	26.916	117.5	4.07	114.4	4.97	6.47	2.46	1471.
400*	3.83	34.027	397	27.055	105.0	3.80	101.3	6.07	10.40	1.44	1471.
403	3.82*	34.031	400	27.059	104.6	3.79	100.3	6.10	10.34	1.41	1471.
500*	3.62	34.118	496	27.148	96.8	3.58	92.3	7.07	15.00	0.93	1472.
504	3.61*	34.121	500	27.151	96.5	3.57	92.1	7.11	15.20	0.91	1472.
600*	3.44	34.190	595	27.222	90.3	3.40	85.3	8.00	20.23		1473.
605	3.44*	34.193*	600	27.226	90.0	3.39	84.9	8.05	20.52		1473.
700*	3.30	34.251	701	27.285	84.9	3.25	79.3	8.88	26.02		1474.
800*	3.17	34.304	794	27.339	80.4	3.11	74.1	9.70	32.34	0.55	1475.
808	3.16	34.308	801	27.343	80.0	3.10	73.7	9.77	32.89	0.57	1476.
900*	3.02	34.343	897	27.384	76.4	2.96	69.8	10.49	39.12	0.57	1477.
1000*	2.89	34.378	991	27.424	73.0	2.82	66.0	11.23	46.35	0.57	1478.
1012	2.87	34.382	1002	27.428	72.7	2.80	65.5	11.32	47.23	0.57	1478.
1200*	2.64	34.458	1189	27.510	65.5	2.56	57.7	12.62	61.90		1480.
1215	2.62	34.464	1203	27.516	65.0	2.54	57.2	12.72	63.15		1480.
1500*	2.31	34.516	1485	27.584	59.2	2.21	50.6	14.48	87.42		1484.
1519	2.29	34.519	1502	27.588	58.8	2.19	50.2	14.59	89.12	0.78	1484.
2000*	1.97	34.587	1979	27.668	52.1	1.83	42.5	17.24	136.72	1.36	1491.
2028	1.95	34.590	2003	27.672	51.8	1.81	42.0	17.38	139.69	1.39	1491.
2500*	1.75	34.629	2470	27.719	48.1	1.57	37.3	19.73	193.76	2.02	1498.
2540	1.73	34.632	2506	27.722	47.9	1.55	37.1	19.92	193.71	2.07	1499.
3000*	1.60	34.649	2960	27.745	46.3	1.39	34.5	22.08	259.63	2.52	1506.
3053	1.59	34.651	3008	27.748	46.2	1.36	34.4	22.32	267.14	2.50	1507.
3500*	1.58	34.666	3450	27.761	46.2	1.31	32.8	24.38	335.97		1514.
3576	1.58*	34.669*	3520	27.763	46.3	1.30	32.5	24.74	348.73		1515.
4000*	1.57	34.681	3938	27.773	46.4	1.25	31.3	26.70	424.55		1523.
4099	1.57	34.684	4030	27.776	46.4	1.23	30.9	27.16	443.61	3.24	1525.
4100*	1.57	34.684	4031	27.776	46.4	1.23	30.9	27.16	443.72	3.24	1525.
4200*	1.55	34.684	4128	27.777	46.4	1.20	30.7	27.63	463.37	3.33	1526.
4207	1.55	34.684	4135	27.777	46.5	1.20	30.7	27.66	464.81	3.33	1526.
4315	1.54	34.692	4240	27.784	46.0	1.18	30.0	28.16	480.49		1528.

Results of STP Observations
(P-76-5)

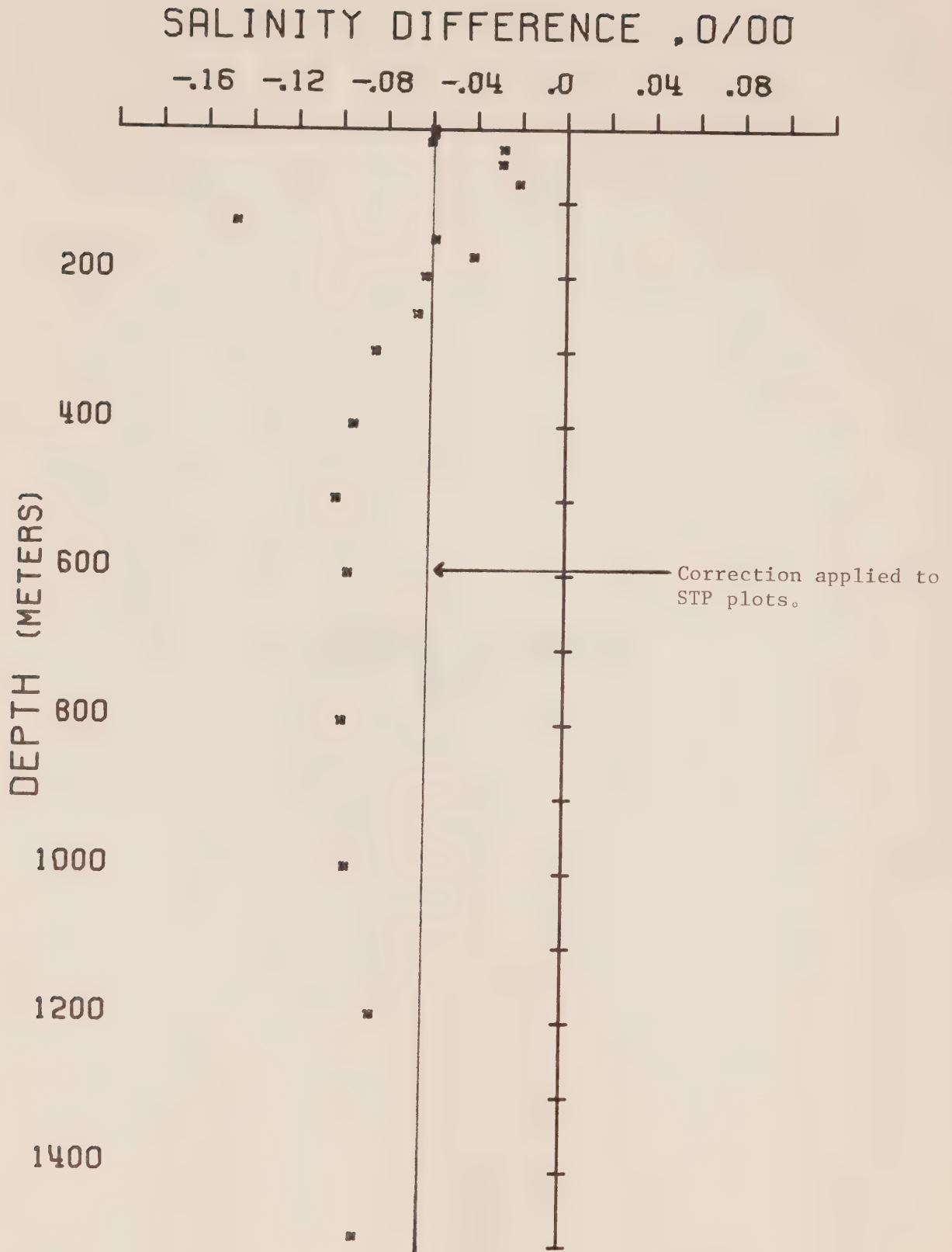


Figure 5. Salinity difference between hydro data and STP. P-76-5.

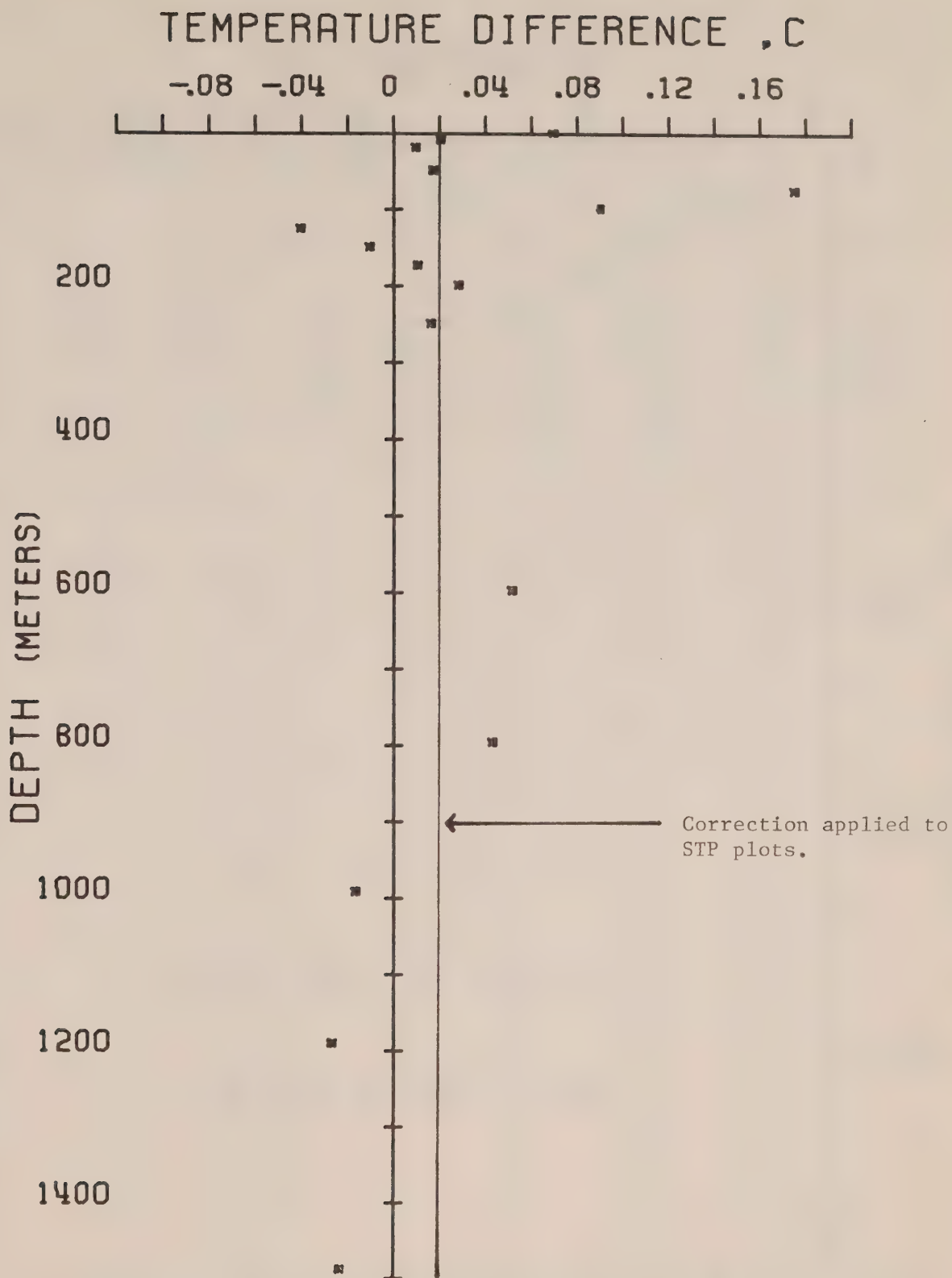
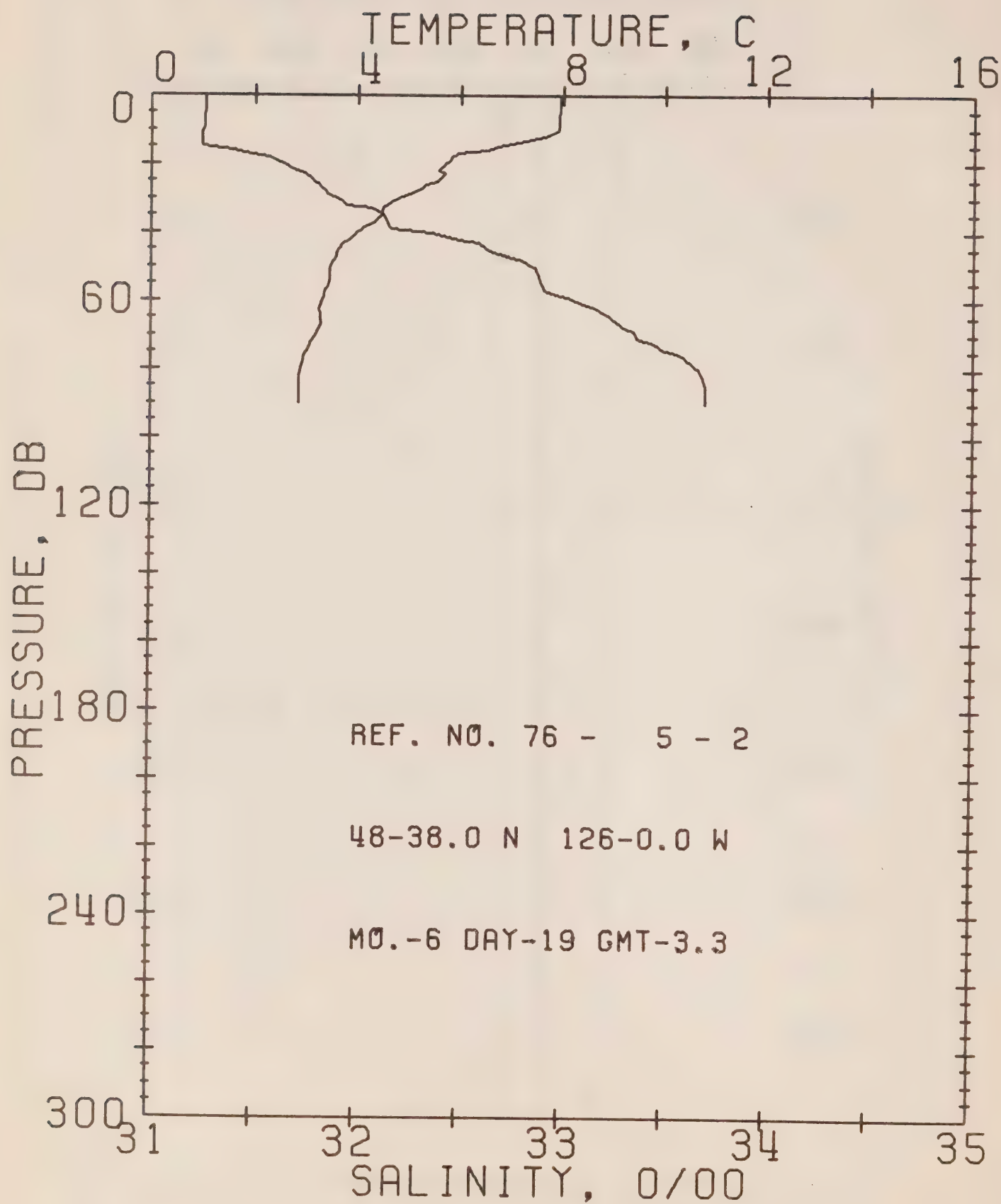


Figure 6. Temperature difference between hydro data and STP. P-76-5



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DATE 19/ 6/76

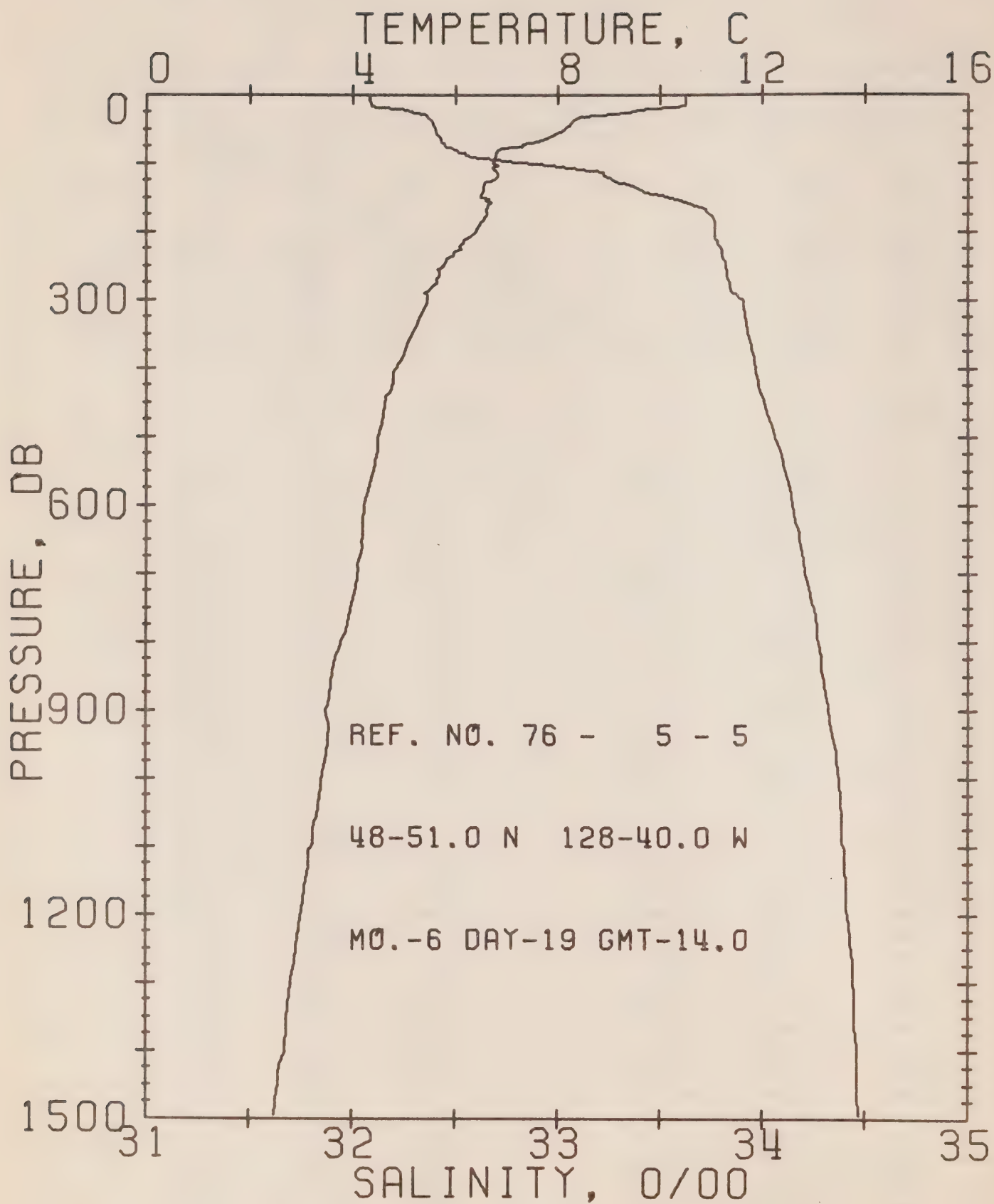
STATION 2

POSITION 48-38.0N, 126- 0.0W GMT 3.3

RESULTS OF STP CAST 71 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.94	31.26	0	24.38	356.2	0.0	0.0	1478.
10	7.91	31.25	10	24.37	356.9	0.36	0.02	1478.
20	5.70	31.64	20	24.96	300.7	0.69	0.07	1470.
30	4.79	31.90	30	25.27	271.5	0.98	0.14	1466.
50	3.50	32.86	50	26.16	187.0	1.44	0.33	1463.
75	3.01	33.56	75	26.76	130.1	1.85	0.58	1462.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	7.94	31.26	45.	3.62	32.64
3.	7.94	31.26	47.	3.60	32.73
4.	7.94	31.26	48.	3.58	32.80
7.	7.93	31.25	49.	3.53	32.82
9.	7.92	31.25	50.	3.50	32.86
10.	7.91	31.25	51.	3.48	32.87
11.	7.82	31.24	54.	3.46	32.89
12.	7.66	31.24	56.	3.45	32.90
14.	7.00	31.24	57.	3.40	32.91
15.	6.75	31.24	58.	3.35	32.97
16.	6.53	31.39	59.	3.35	33.02
17.	5.96	31.45	61.	3.30	33.10
18.	5.84	31.57	62.	3.27	33.16
19.	5.80	31.59	63.	3.26	33.18
20.	5.70	31.64	64.	3.27	33.22
21.	5.65	31.66	65.	3.29	33.24
22.	5.57	31.70	66.	3.29	33.26
23.	5.70	31.74	67.	3.30	33.28
24.	5.63	31.77	68.	3.27	33.31
25.	5.54	31.79	69.	3.24	33.35
26.	5.33	31.81	71.	3.17	33.36
27.	5.29	31.82	72.	3.12	33.43
28.	5.12	31.84	73.	3.09	33.46
29.	5.02	31.85	74.	3.07	33.48
30.	4.79	31.90	75.	3.01	33.56
31.	4.69	31.92	76.	2.98	33.59
32.	4.58	31.94	77.	2.96	33.60
33.	4.52	32.07	78.	2.95	33.63
34.	4.49	32.11	79.	2.93	33.64
35.	4.47	32.12	80.	2.92	33.67
37.	4.34	32.14	83.	2.89	33.69
38.	4.19	32.15	85.	2.89	33.70
39.	4.11	32.16	86.	2.89	33.70
40.	4.01	32.36	88.	2.89	33.70
42.	3.88	32.49	90.	2.89	33.70
43.	3.75	32.59			



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REFERENCE NO. 76-5-5

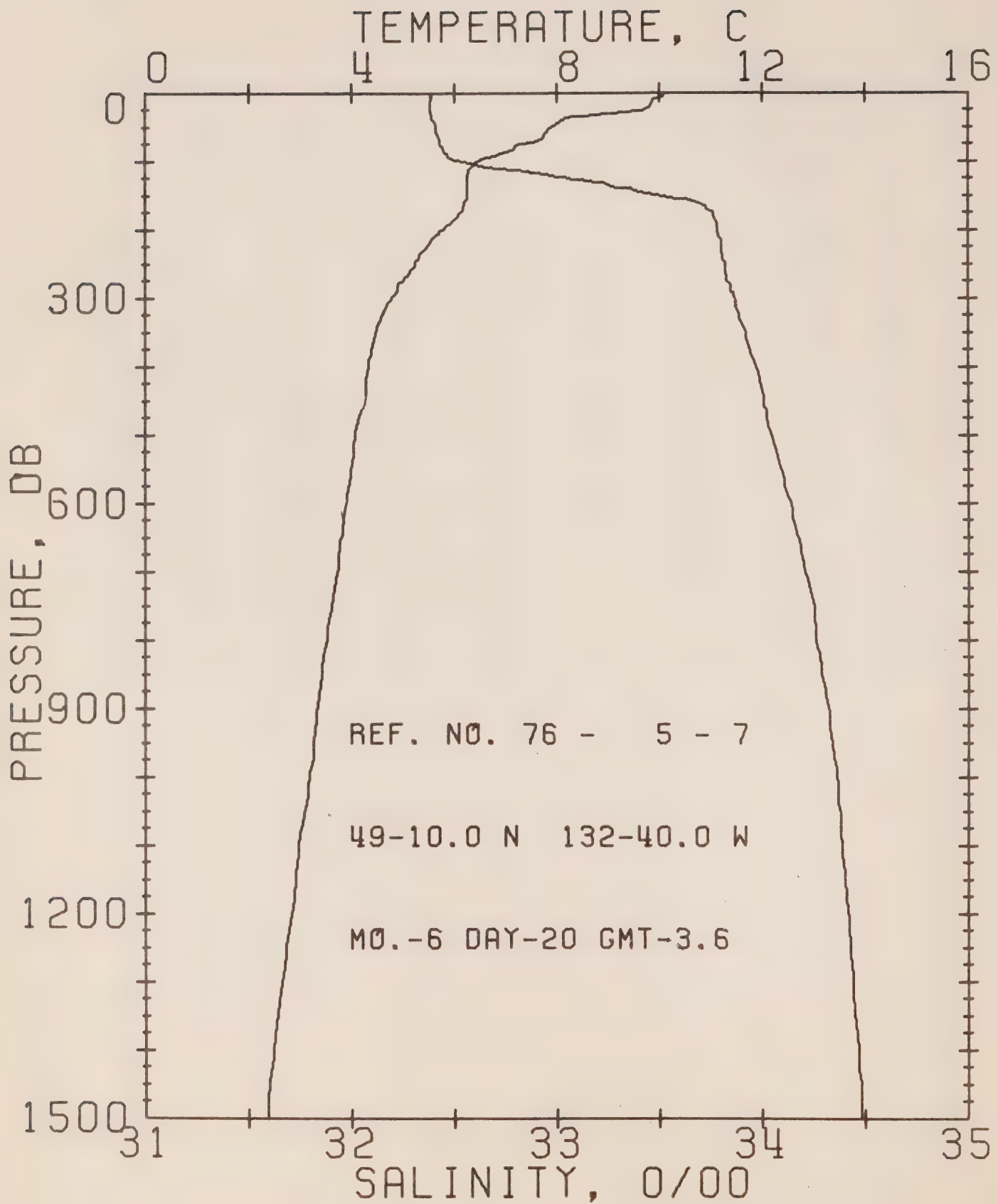
DATE 19/ 6/76

STATION 5

POSITION 48-51.0N, 128-40.0W GMT 14.0

RESULTS OF STP CAST . 230 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.51	32.08	0	24.61	333.5	0.0	0.0	1439.
10	10.51	32.08	10	24.61	333.9	0.33	0.02	1489.
20	9.89	32.21	20	24.82	314.5	0.66	0.07	1487.
30	8.31	32.36	30	25.11	287.2	0.97	0.14	1433.
50	8.14	32.40	50	25.24	275.1	1.52	0.37	1481.
75	7.29	32.46	75	25.41	259.4	2.19	0.80	1478.
100	6.72	32.85	99	25.79	222.9	2.80	1.34	1477.
125	6.68	33.28	124	26.13	191.0	3.31	1.92	1478.
150	6.49	33.55	149	26.37	163.7	3.76	2.55	1478.
175	6.59	33.74	174	26.51	155.9	4.16	3.22	1479.
200	6.37	33.77	199	26.56	151.5	4.55	3.95	1478.
225	6.10	33.80	223	26.62	146.2	4.92	4.75	1478.
250	5.75	33.82	248	26.68	140.6	5.28	5.62	1477.
300	5.45	33.91	298	26.78	131.0	5.96	7.54	1476.
400	4.85	33.97	397	26.90	120.5	7.22	12.03	1476.
500	4.49	34.06	496	27.01	110.7	8.36	17.32	1476.
600	4.22	34.15	595	27.11	101.8	9.44	23.26	1476.
800	3.77	34.27	793	27.26	89.1	11.36	36.93	1478.
1000	3.40	34.37	991	27.37	79.2	13.04	52.26	1480.
1200	3.00	34.41	1188	27.44	73.0	14.55	69.26	1482.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 7

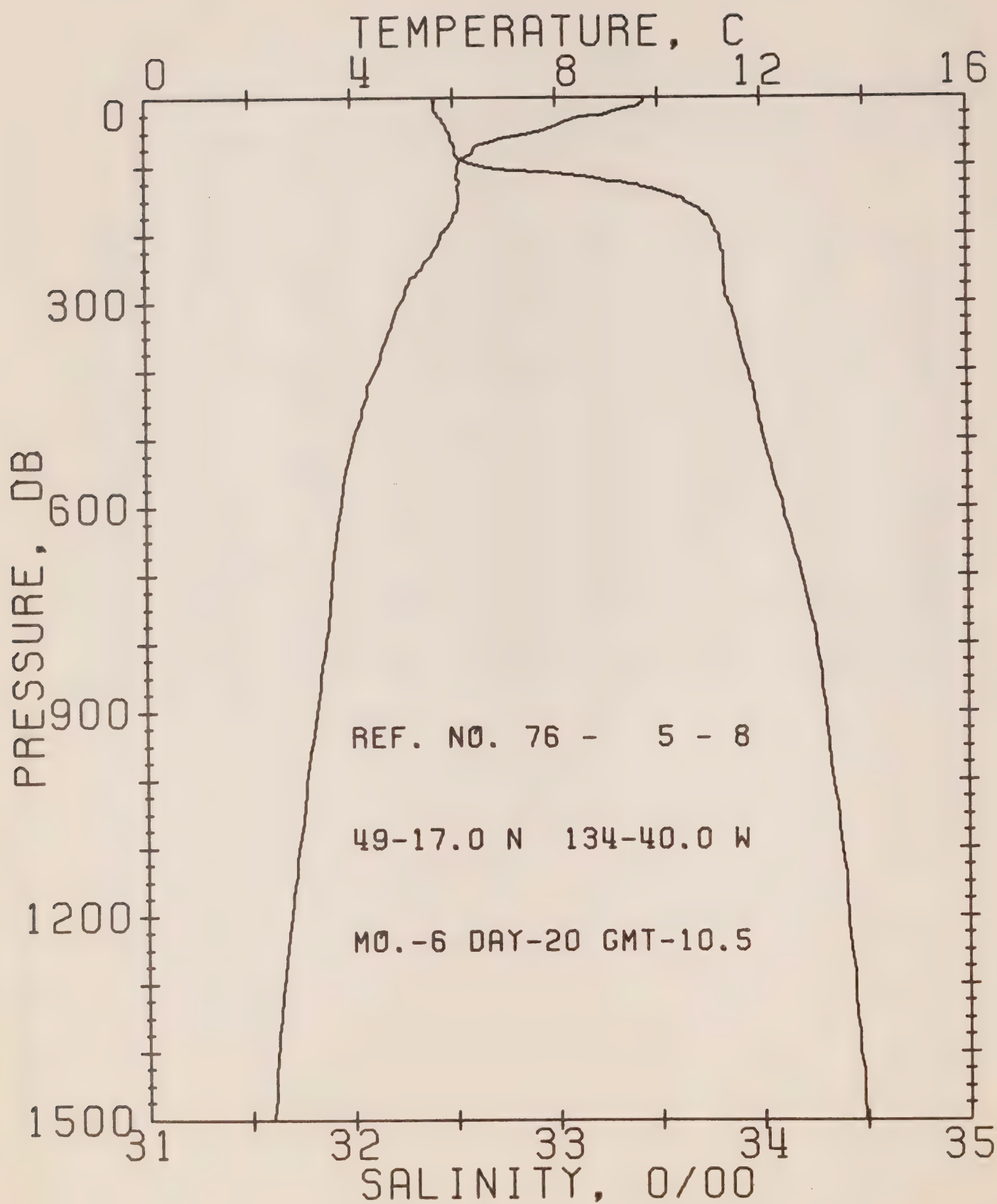
DATE 20/ 6/76

STATION 7

POSITION 49-10.0N, 132-40.0W GMT 3.6

RESULTS OF STP CAST 228 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.07	32.39	0	24.93	303.5	0.0	0.0	1487.
10	9.88	32.39	10	24.96	301.0	0.30	0.02	1487.
20	9.81	32.38	20	24.96	300.7	0.60	0.06	1487.
30	9.20	32.38	30	25.06	291.5	0.90	0.14	1485.
50	7.90	32.41	50	25.28	271.0	1.45	0.36	1480.
75	7.19	32.43	75	25.40	260.3	2.12	0.79	1478.
100	6.45	32.55	99	25.59	242.2	2.76	1.35	1475.
125	6.23	33.08	124	26.03	200.2	3.32	1.99	1475.
150	6.23	33.52	149	26.38	167.7	3.78	2.63	1476.
175	6.11	33.75	174	26.58	149.0	4.17	3.28	1477.
200	5.77	33.78	199	26.64	143.4	4.53	3.97	1476.
225	5.45	33.80	223	26.70	138.3	4.88	4.73	1475.
250	5.22	33.82	248	26.74	134.4	5.22	5.56	1474.
300	4.77	33.85	298	26.81	127.5	5.88	7.39	1473.
400	4.31	33.97	397	26.96	114.4	7.08	11.66	1473.
500	4.06	34.04	496	27.04	107.0	8.18	16.74	1474.
600	3.86	34.14	595	27.14	98.6	9.21	22.50	1475.
800	3.51	34.26	793	27.27	87.2	11.06	35.64	1477.
1000	3.17	34.36	991	27.39	77.3	12.70	50.61	1479.
1200	2.82	34.42	1188	27.46	70.7	14.18	67.19	1481.
1500	2.36	34.48	1484	27.55	62.4	16.16	94.37	1484.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 8

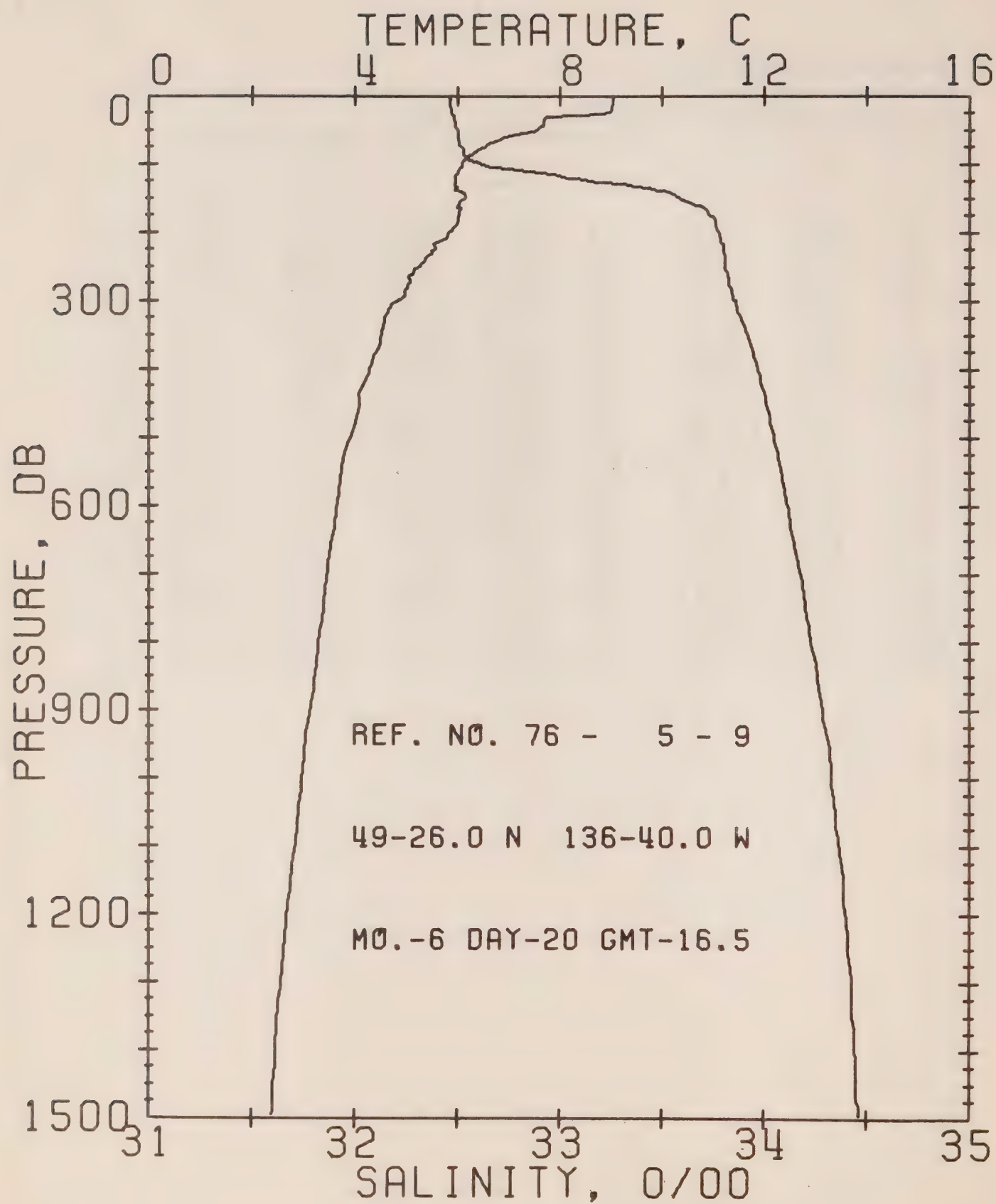
DATE 20/ 6/76

STATION 8

POSITION 49-17.0N, 134-40.0W GMT 10.5

RESULTS OF STP CAST 227 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.73	32.41	0	25.00	296.7	0.0	0.0	1486.
10	9.68	32.41	10	25.01	296.3	0.30	0.02	1486.
20	9.17	32.41	20	25.09	288.7	0.59	0.06	1484.
30	8.38	32.44	30	25.23	275.1	0.87	0.13	1482.
50	7.66	32.48	50	25.37	262.7	1.41	0.35	1479.
75	6.39	32.51	75	25.56	244.2	2.04	0.75	1475.
100	6.09	32.62	99	25.69	232.2	2.64	1.29	1474.
125	6.11	33.37	124	26.28	177.1	3.15	1.87	1475.
150	6.10	33.63	149	26.48	157.9	3.57	2.45	1476.
175	5.99	33.74	174	26.59	148.3	3.95	3.08	1476.
200	5.75	33.79	199	26.66	142.0	4.31	3.78	1476.
225	5.59	33.81	223	26.69	138.9	4.66	4.54	1476.
250	5.38	33.82	248	26.72	136.2	5.01	5.37	1475.
300	4.95	33.84	298	26.79	130.3	5.67	7.23	1474.
400	4.45	33.94	397	26.92	118.5	6.91	11.65	1474.
500	4.02	34.01	496	27.02	108.9	8.05	16.85	1474.
600	3.77	34.10	595	27.12	100.3	9.09	22.70	1474.
800	3.47	34.26	793	27.28	86.8	10.95	35.93	1477.
1000	3.09	34.34	990	27.37	78.2	12.60	50.97	1478.
1200	2.77	34.41	1188	27.46	70.6	14.08	67.54	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 9

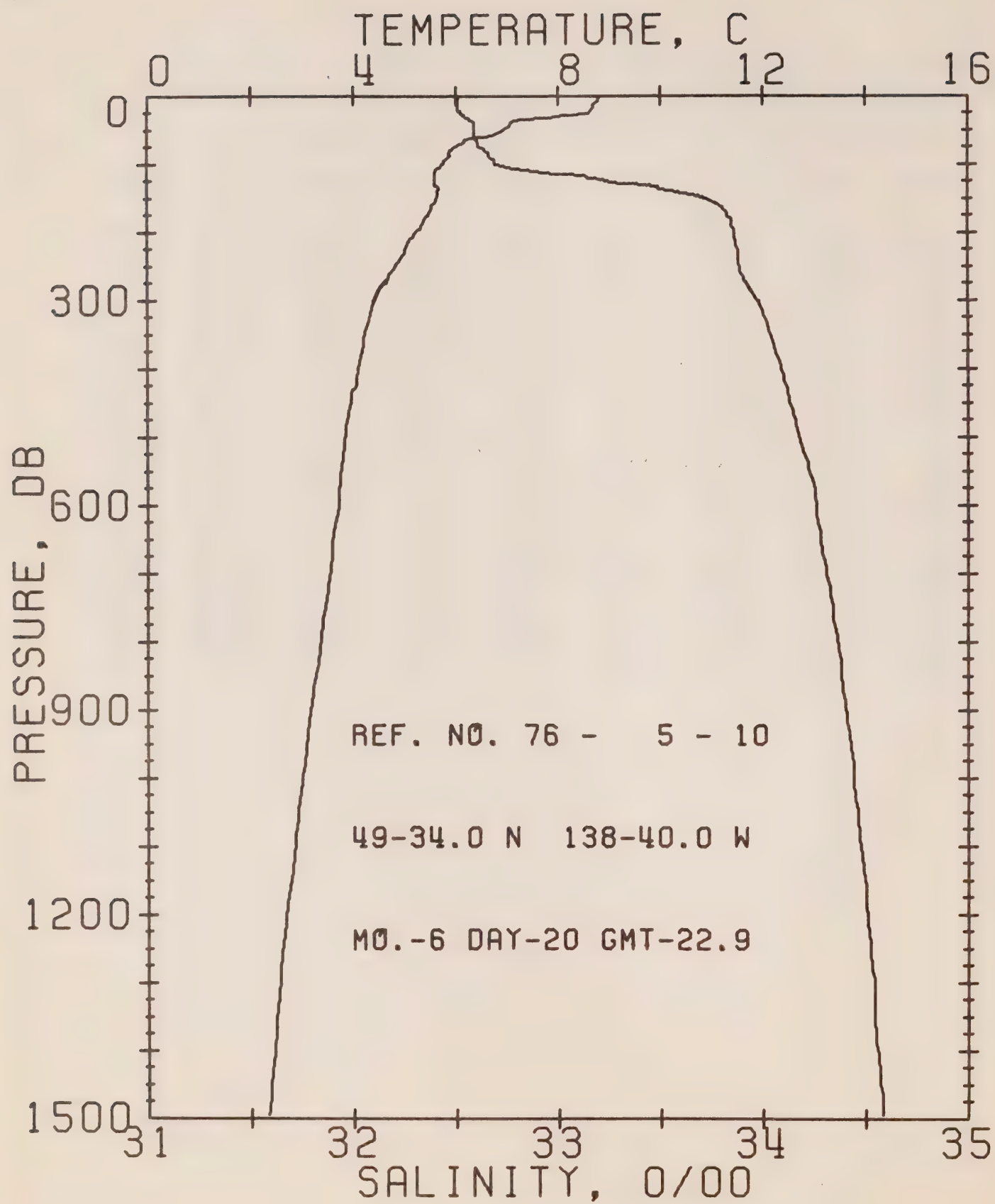
DATE 20/ 6/76

STATION 9

POSITION 49-26.0N, 136-40.0W GMT 16.5

RESULTS OF STP CAST 233 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SJUND
0	9.03	32.46	0	25.15	282.4	0.0	0.0	1484.
10	9.03	32.46	10	25.15	282.8	0.28	0.01	1484.
20	9.01	32.47	20	25.16	282.0	0.57	0.06	1484.
30	7.96	32.48	30	25.33	266.2	0.84	0.13	1480.
50	7.55	32.50	50	25.40	259.4	1.37	0.34	1479.
75	6.50	32.52	75	25.56	244.7	1.99	0.74	1475.
100	6.08	32.61	99	25.68	233.0	2.59	1.28	1474.
125	5.96	33.18	124	26.15	189.5	3.12	1.88	1475.
150	6.16	33.59	149	26.44	161.6	3.55	2.48	1476.
175	6.01	33.74	174	26.58	148.9	3.93	3.11	1476.
200	5.83	33.78	199	26.63	144.2	4.30	3.81	1476.
225	5.52	33.80	223	26.69	139.1	4.65	4.58	1475.
250	5.26	33.81	248	26.73	135.6	5.00	5.41	1475.
300	4.83	33.86	298	26.82	127.4	5.66	7.25	1474.
400	4.28	33.97	397	26.96	114.1	6.86	11.52	1473.
500	3.90	34.05	496	27.07	104.9	7.95	16.53	1473.
600	3.64	34.12	595	27.14	98.0	8.96	22.19	1474.
800	3.29	34.23	793	27.27	87.3	10.80	35.32	1476.
1000	2.97	34.33	990	27.38	77.6	12.44	50.31	1478.
1200	2.68	34.40	1188	27.46	70.6	13.92	66.87	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 10

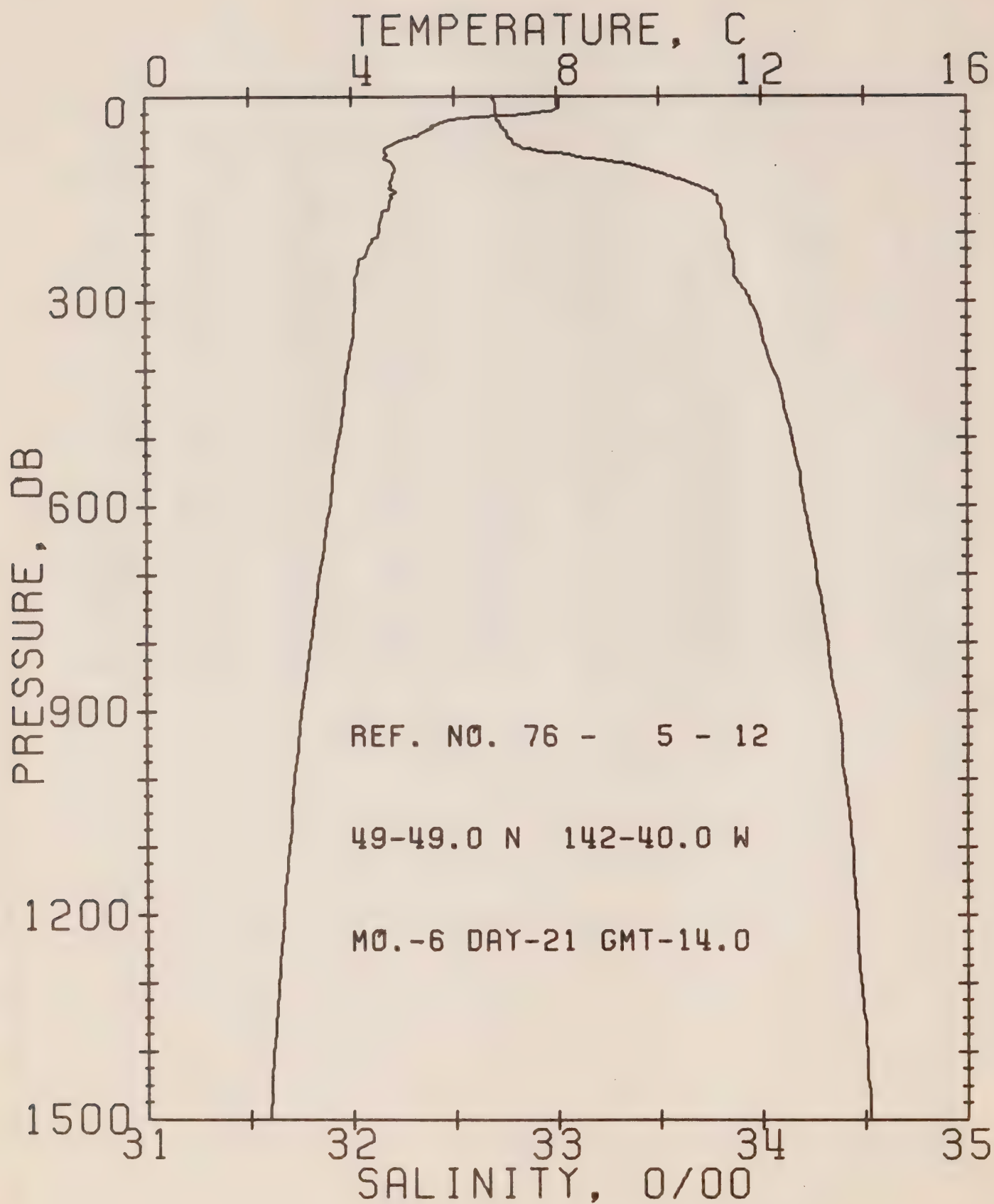
DATE 20/ 6/76

STATION 10

POSITION 49-34.0N, 138-40.0W GMT 22.9

RESULTS OF STP CAST 245 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.73	32.51	0	25.24	274.2	0.0	0.0	1482.
10	8.74	32.51	10	25.23	274.8	0.28	0.01	1483.
20	8.66	32.51	20	25.25	273.7	0.55	0.06	1483.
30	7.96	32.54	30	25.37	261.8	0.82	0.12	1480.
50	6.93	32.59	50	25.56	244.6	1.32	0.33	1476.
75	5.99	32.62	75	25.70	231.4	1.91	0.71	1473.
100	5.73	32.69	99	25.79	223.2	2.48	1.21	1473.
125	5.56	33.25	124	26.25	179.5	2.98	1.78	1473.
150	5.61	33.71	149	26.61	145.7	3.38	2.34	1474.
175	5.44	33.83	174	26.72	135.4	3.73	2.92	1474.
200	5.22	33.86	199	26.77	130.9	4.06	3.55	1474.
225	5.00	33.88	223	26.81	127.3	4.38	4.25	1473.
250	4.78	33.88	248	26.84	124.7	4.70	5.02	1473.
300	4.42	33.96	298	26.94	115.5	5.30	6.71	1472.
400	4.09	34.09	397	27.08	103.1	6.39	10.56	1473.
500	3.83	34.18	496	27.17	94.6	7.37	15.07	1473.
600	3.70	34.26	595	27.25	87.9	8.28	20.15	1474.
800	3.35	34.36	793	27.37	77.8	9.94	31.95	1476.
1000	2.99	34.44	990	27.46	69.5	11.40	45.38	1478.
1200	2.67	34.51	1188	27.55	62.4	12.72	60.14	1480.



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REFERENCE NO. 76- 5- 12

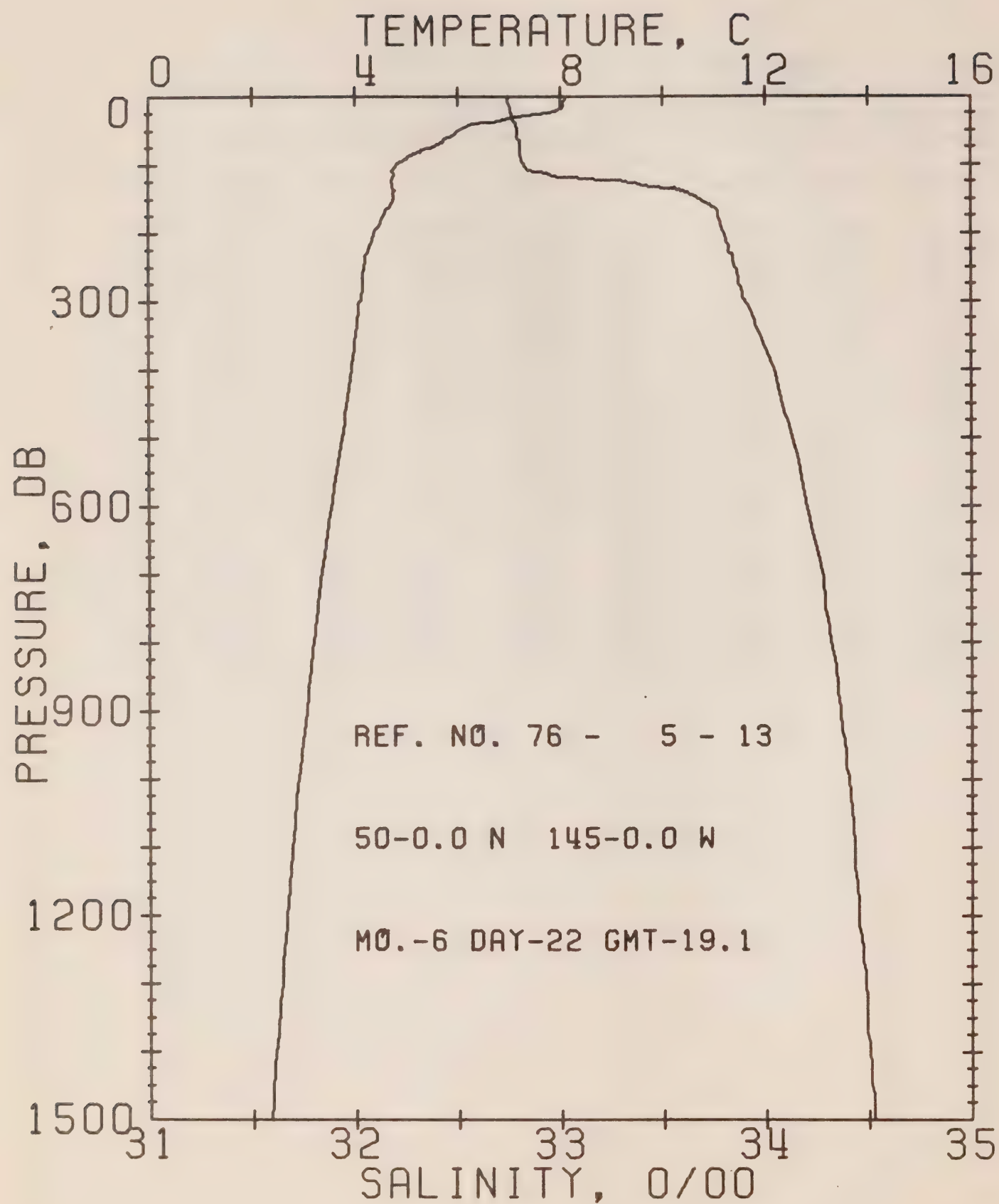
DATE 21/ 6/76

STATION 12

POSITION 49-49.0N, 142-40.0W GMT 14.0

RESULTS OF STP CAST 220 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.05	32.69	0	25.48	251.2	0.0	0.0	1480.
10	8.05	32.70	10	25.49	250.8	0.25	0.01	1480.
20	7.99	32.70	20	25.49	250.1	0.50	0.05	1480.
30	6.60	32.71	30	25.69	231.3	0.74	0.11	1475.
50	5.48	32.74	50	25.86	215.6	1.19	0.29	1471.
75	4.65	32.84	75	26.03	199.8	1.71	0.62	1468.
100	4.82	33.38	99	26.43	161.5	2.16	1.02	1470.
125	4.76	33.65	124	26.66	140.8	2.54	1.46	1470.
150	4.76	33.79	149	26.77	130.4	2.87	1.93	1471.
175	4.58	33.81	174	26.80	127.2	3.20	2.46	1471.
200	4.52	33.83	199	26.83	125.3	3.51	3.06	1471.
225	4.30	33.85	223	26.86	121.9	3.82	3.73	1470.
250	4.11	33.87	248	26.90	118.4	4.12	4.46	1470.
300	4.04	33.95	298	26.97	112.1	4.70	6.08	1471.
400	3.90	34.06	397	27.07	103.5	5.78	9.93	1472.
500	3.72	34.15	496	27.16	95.8	6.77	14.48	1473.
600	3.55	34.21	595	27.22	90.3	7.70	19.67	1474.
800	3.17	34.32	793	27.35	79.3	9.39	31.69	1476.
1000	2.86	34.40	990	27.45	71.0	10.89	45.39	1478.
1200	2.65	34.46	1188	27.51	65.5	12.25	60.63	1480.



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REFERENCE NO. 76- 5- 13

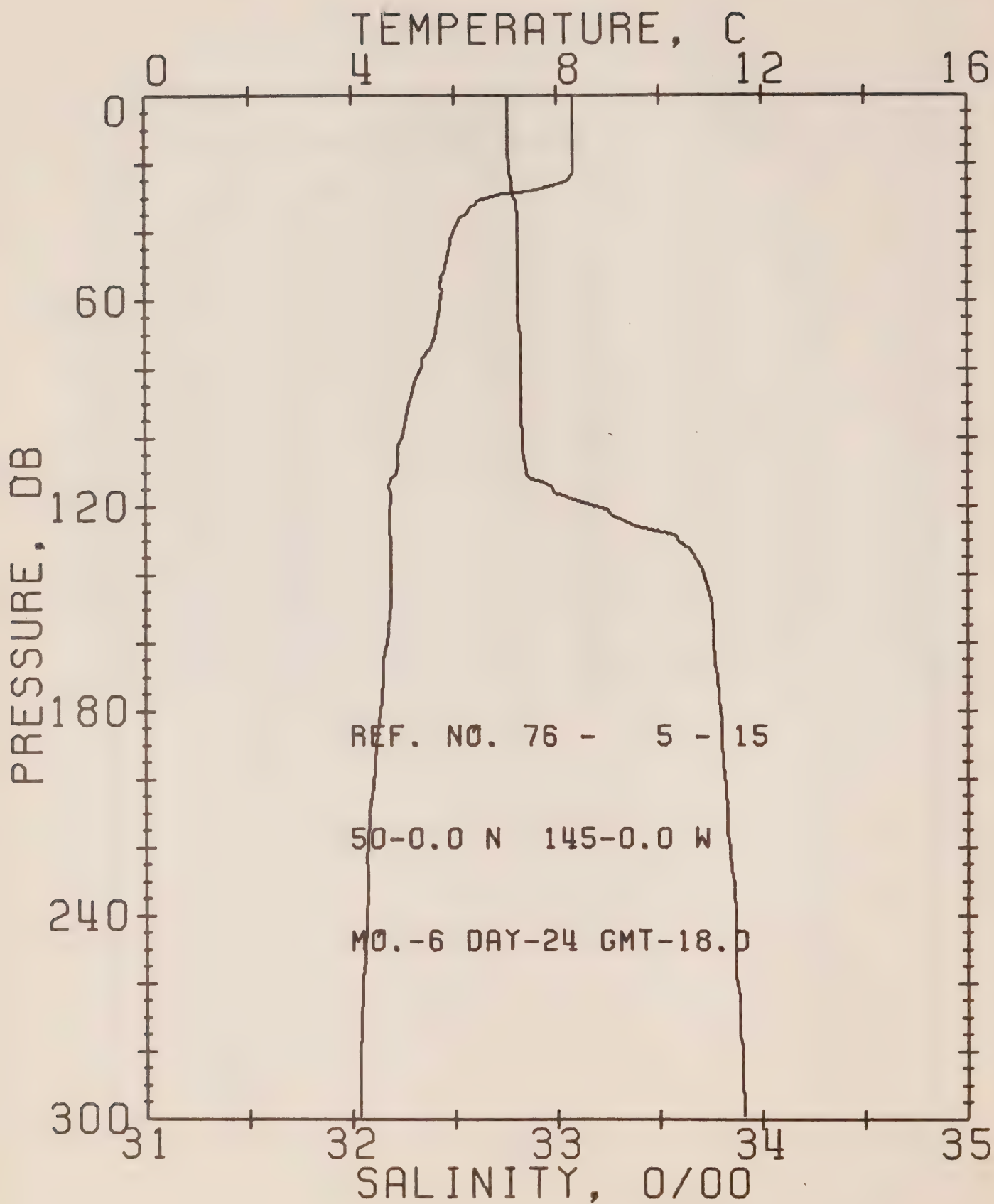
DATE 22/ 6/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.1

RESULTS OF STP CAST 188 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	8.05	32.74	0	25.52	247.4	0.0	0.0	1480.
10	8.05	32.74	10	25.52	247.8	0.25	0.01	1480.
20	7.97	32.75	20	25.54	246.1	0.50	0.05	1480.
30	7.25	32.76	30	25.65	235.8	0.74	0.11	1478.
50	6.01	32.79	50	25.83	218.4	1.19	0.29	1473.
75	5.49	32.80	75	25.90	211.9	1.73	0.64	1471.
100	4.80	32.82	99	26.00	203.0	2.24	1.10	1469.
125	4.72	33.34	124	26.42	163.5	2.72	1.65	1470.
150	4.74	33.67	149	26.68	138.8	3.09	2.17	1471.
175	4.54	33.77	174	26.78	129.8	3.43	2.72	1470.
200	4.36	33.80	199	26.82	126.1	3.75	3.33	1470.
225	4.24	33.82	223	26.85	123.3	4.06	4.00	1470.
250	4.16	33.85	248	26.88	120.4	4.36	4.74	1470.
300	4.10	33.90	298	26.93	116.5	4.96	6.40	1471.
400	3.92	34.04	397	27.06	104.9	6.06	10.33	1472.
500	3.73	34.13	496	27.15	97.1	7.07	14.97	1473.
600	3.52	34.20	595	27.22	90.5	8.01	20.21	1474.
800	3.17	34.32	793	27.35	79.4	9.69	32.19	1475.
1000	2.87	34.40	990	27.44	71.2	11.20	45.96	1478.
1200	2.65	34.45	1188	27.50	66.3	12.57	61.31	1480.
1500	2.34	34.52	1484	27.58	59.2	14.44	87.00	1484.



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REFERENCE NO. 76- 5- 15

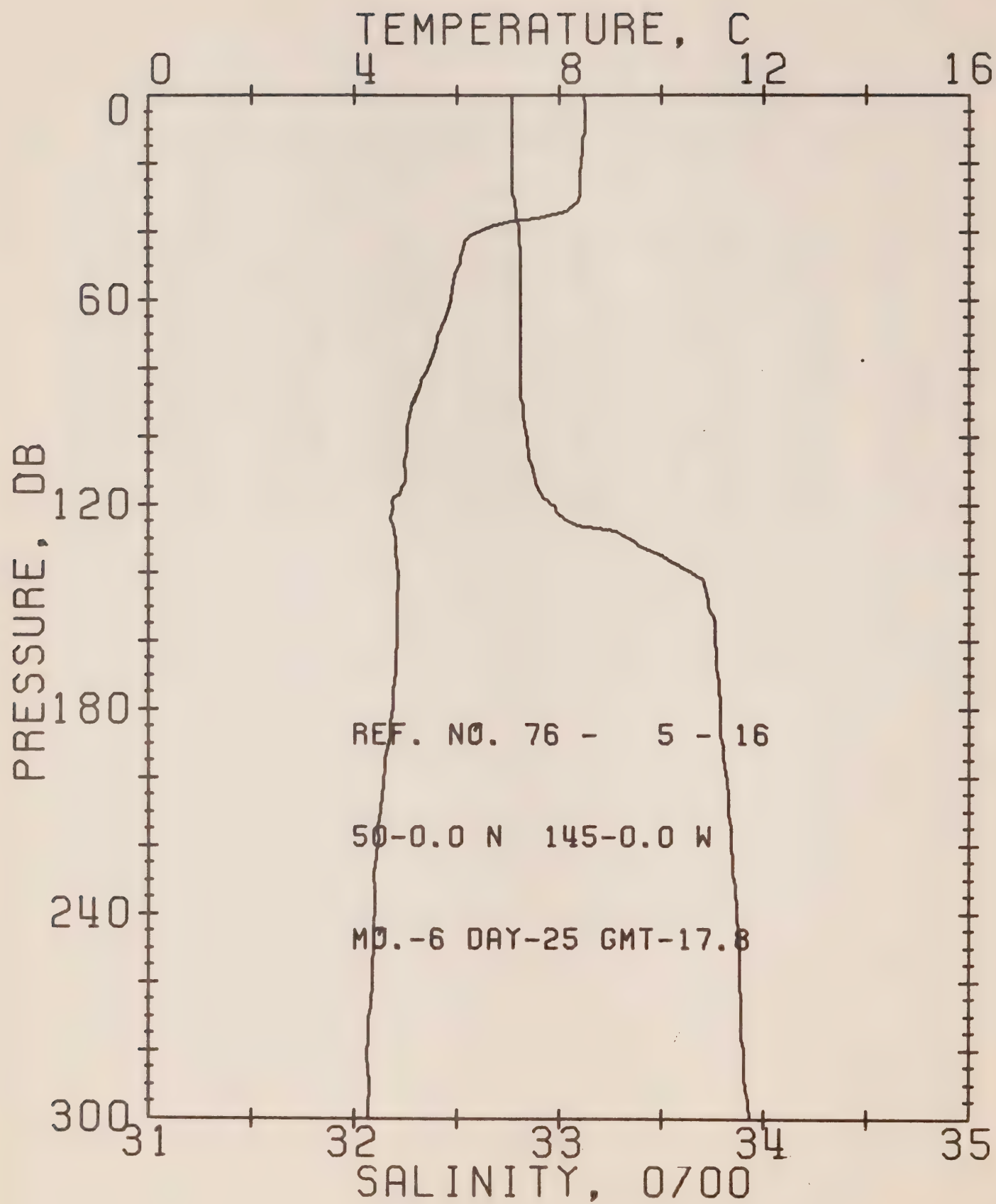
DATE 24/ 6/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.0

RESULTS OF STP CAST 116 PCINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.33	32.76	0	25.49	249.9	0.0	0.0	1481.
10	8.33	32.76	10	25.49	250.3	0.25	0.01	1481.
20	8.32	32.77	20	25.50	249.7	0.50	0.05	1482.
30	6.64	32.79	30	25.75	225.8	0.74	0.11	1475.
50	5.82	32.81	50	25.87	214.7	1.18	0.29	1472.
75	5.46	32.82	75	25.92	210.1	1.71	0.63	1471.
100	4.97	32.83	99	25.99	204.2	2.23	1.09	1470.
125	4.71	33.35	124	26.43	162.3	2.71	1.64	1470.
150	4.73	33.75	149	26.74	133.1	3.06	2.12	1471.
175	4.56	33.79	174	26.79	128.7	3.38	2.67	1470.
200	4.40	33.82	199	26.83	125.1	3.70	3.27	1470.
225	4.29	33.85	223	26.86	121.8	4.01	3.94	1470.
250	4.24	33.87	248	26.89	119.8	4.31	4.67	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 16

DATE 25/ 6/76

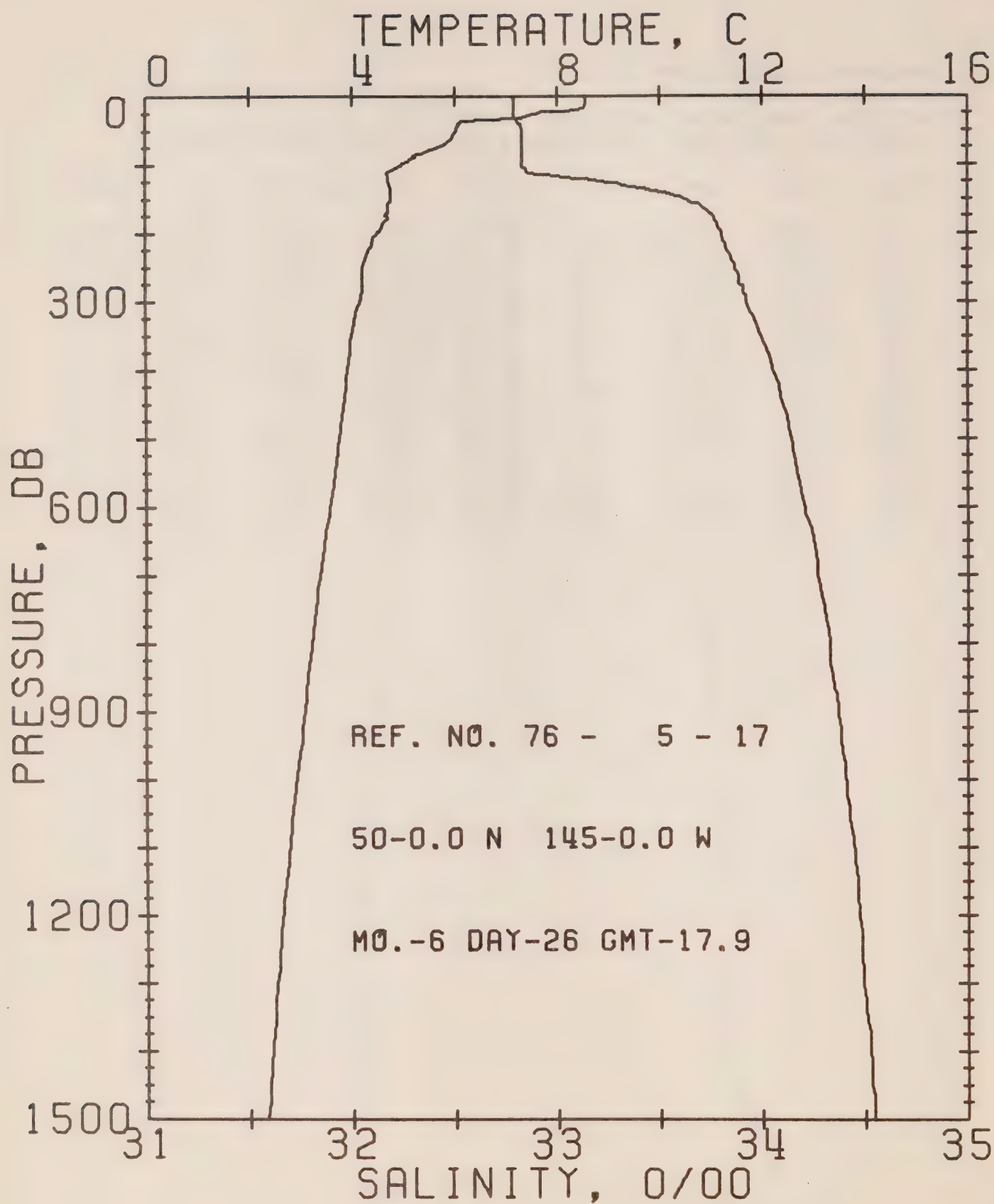
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.8

RESULTS OF STP CAST 128 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.48	32.77	0	25.48	251.2	0.0	0.0	1482.
10	8.50	32.77	10	25.47	251.9	0.25	0.01	1482.
20	8.42	32.77	20	25.49	251.0	0.50	0.05	1482.
30	8.38	32.77	30	25.50	250.2	0.75	0.12	1482.
50	6.01	32.81	50	25.85	216.9	1.21	0.30	1473.
75	5.53	32.81	75	25.91	211.6	1.75	0.64	1471.
100	5.01	32.84	99	25.99	204.1	2.27	1.10	1470.
125	4.73	33.05	124	26.19	185.3	2.76	1.67	1469.
150	4.84	33.73	149	26.71	135.8	3.14	2.20	1471.
175	4.74	33.78	174	26.76	131.0	3.47	2.75	1471.
200	4.56	33.82	199	26.81	126.7	3.79	3.36	1471.
225	4.40	33.85	223	26.85	122.9	4.11	4.04	1471.
250	4.36	33.88	248	26.88	120.3	4.41	4.78	1471.
300	4.27	33.93	298	26.93	116.1	5.00	6.44	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 17

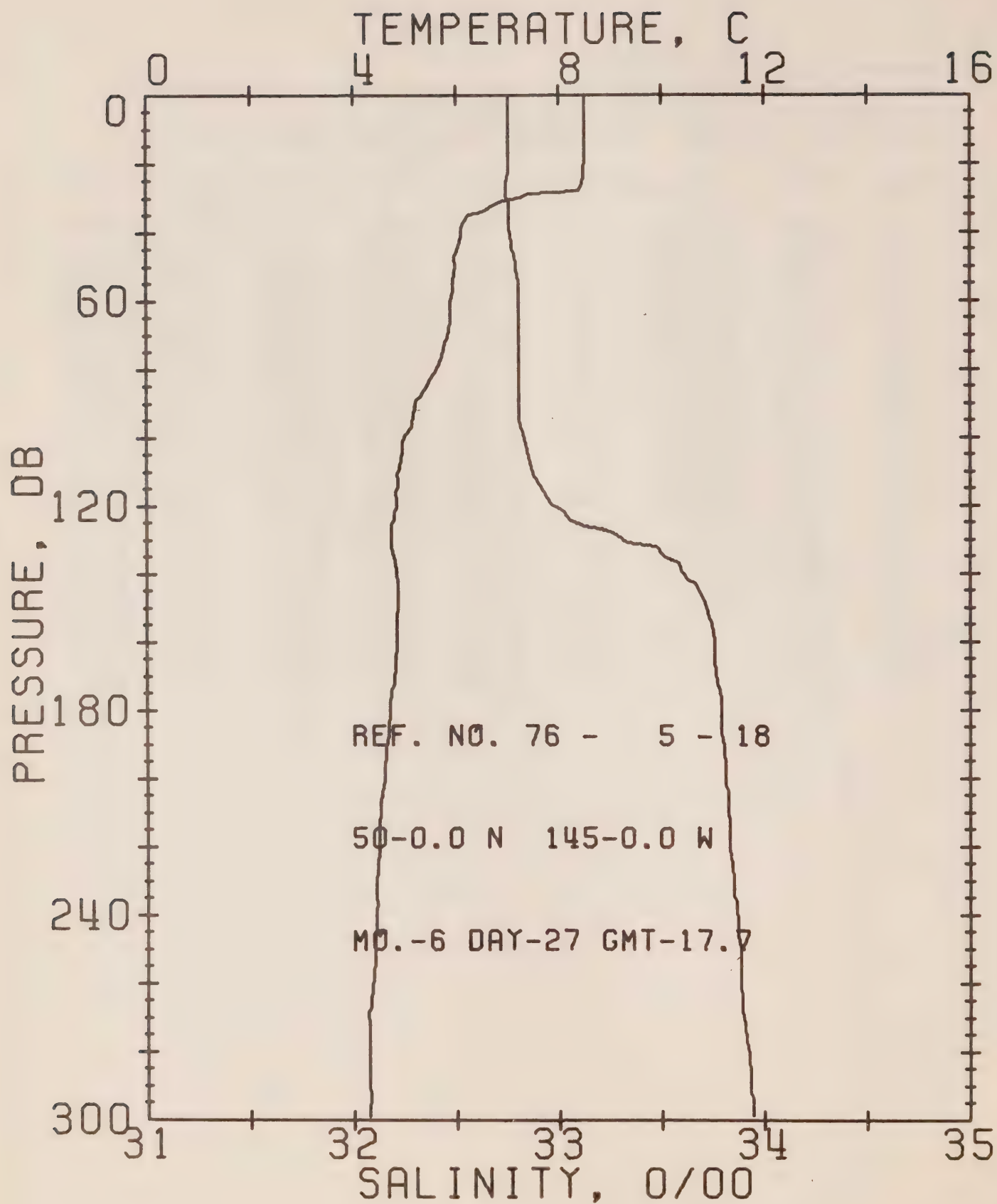
DATE 26/ 6/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.9

RESULTS OF STP CAST 215 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.54	32.79	0	25.48	250.6	0.0	0.0	1482.
10	8.55	32.79	10	25.48	251.2	0.25	0.01	1482.
20	8.37	32.79	20	25.51	248.8	0.50	0.05	1482.
30	7.39	32.79	30	25.65	235.4	0.74	0.11	1478.
50	6.02	32.83	50	25.86	215.5	1.18	0.29	1473.
75	5.64	32.83	75	25.91	211.4	1.72	0.63	1472.
100	4.97	32.83	99	25.95	204.2	2.24	1.09	1470.
125	4.71	33.25	124	26.35	170.1	2.72	1.65	1470.
150	4.75	33.63	149	26.64	142.3	3.11	2.19	1471.
175	4.65	33.75	174	26.75	132.2	3.45	2.75	1471.
200	4.48	33.80	199	26.81	127.1	3.77	3.37	1471.
225	4.31	33.83	223	26.85	123.5	4.09	4.05	1470.
250	4.20	33.87	248	26.89	119.4	4.39	4.78	1470.
300	4.13	33.92	298	26.94	115.3	4.98	6.43	1471.
400	3.89	34.05	397	27.07	103.7	6.06	10.30	1472.
500	3.73	34.14	496	27.15	96.3	7.06	14.87	1473.
600	3.56	34.21	595	27.22	90.2	8.00	20.11	1474.
800	3.21	34.33	793	27.35	78.9	9.68	32.07	1476.
1000	2.90	34.40	990	27.44	71.3	11.18	45.84	1478.
1200	2.62	34.47	1188	27.52	64.5	12.54	60.99	1480.
1500	2.33	34.54	1483	27.60	57.7	14.36	86.07	1484.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 18

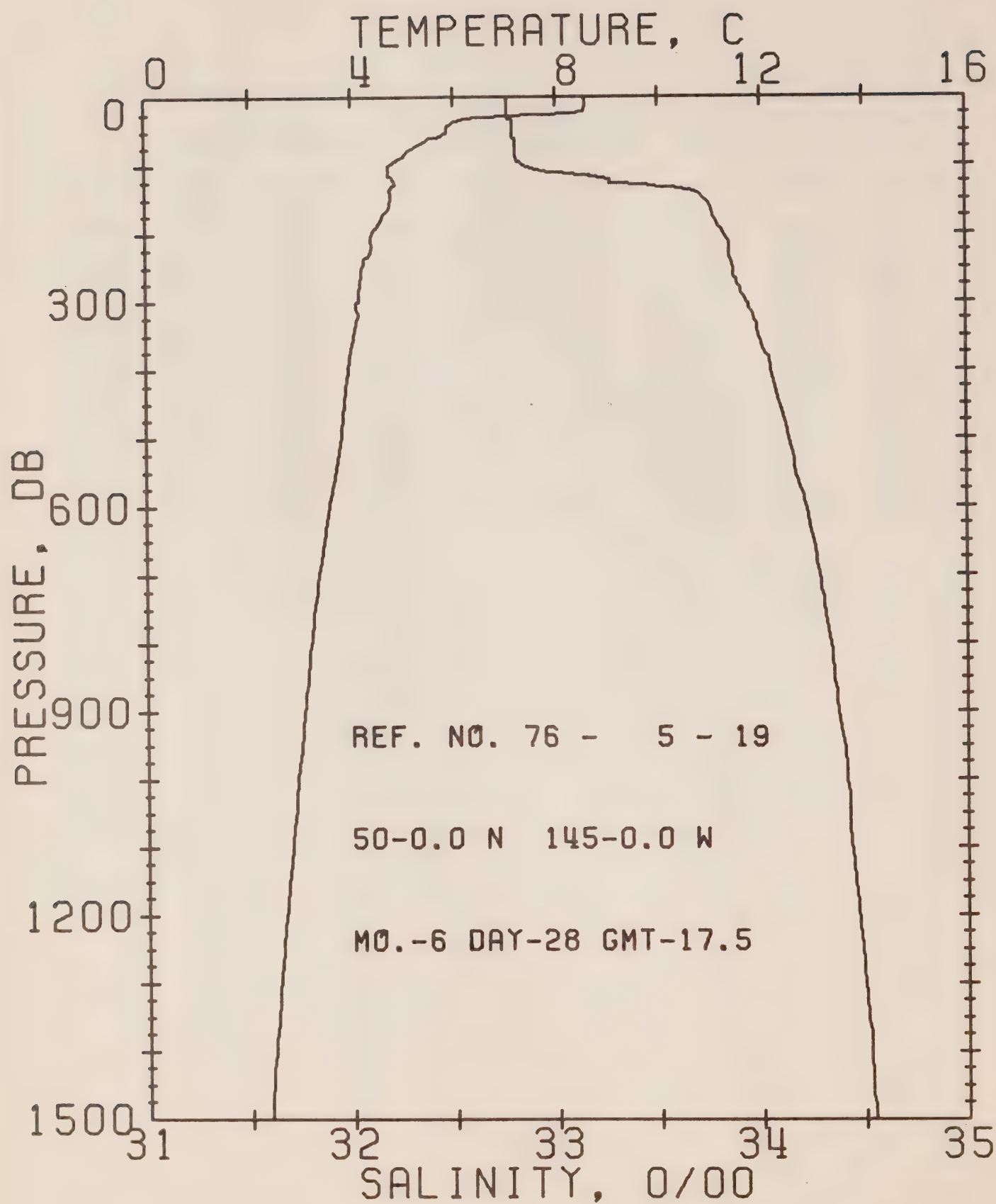
DATE 27/ 6/76

STATION P

POSITION 50- 0.0N. 145- 0.0W GMT 17.7

RESULTS OF STP CAST 138 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.52	32.75	0	25.46	253.3	0.0	0.0	1482.
10	8.52	32.75	10	25.46	253.7	0.25	0.01	1482.
20	8.50	32.75	20	25.46	253.6	0.51	0.05	1482.
30	7.22	32.74	30	25.64	236.9	0.76	0.12	1477.
50	5.97	32.79	50	25.84	217.9	1.20	0.30	1473.
75	5.72	32.80	75	25.88	214.5	1.74	0.64	1472.
100	4.98	32.82	99	25.98	204.6	2.27	1.11	1470.
125	4.73	33.09	124	26.22	182.4	2.76	1.67	1469.
150	4.85	33.71	149	26.70	136.9	3.14	2.20	1471.
175	4.71	33.78	174	26.77	130.7	3.48	2.76	1471.
200	4.58	33.81	199	26.80	127.4	3.80	3.37	1471.
225	4.45	33.84	223	26.84	124.1	4.11	4.05	1471.
250	4.40	33.88	248	26.88	120.7	4.42	4.79	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 19

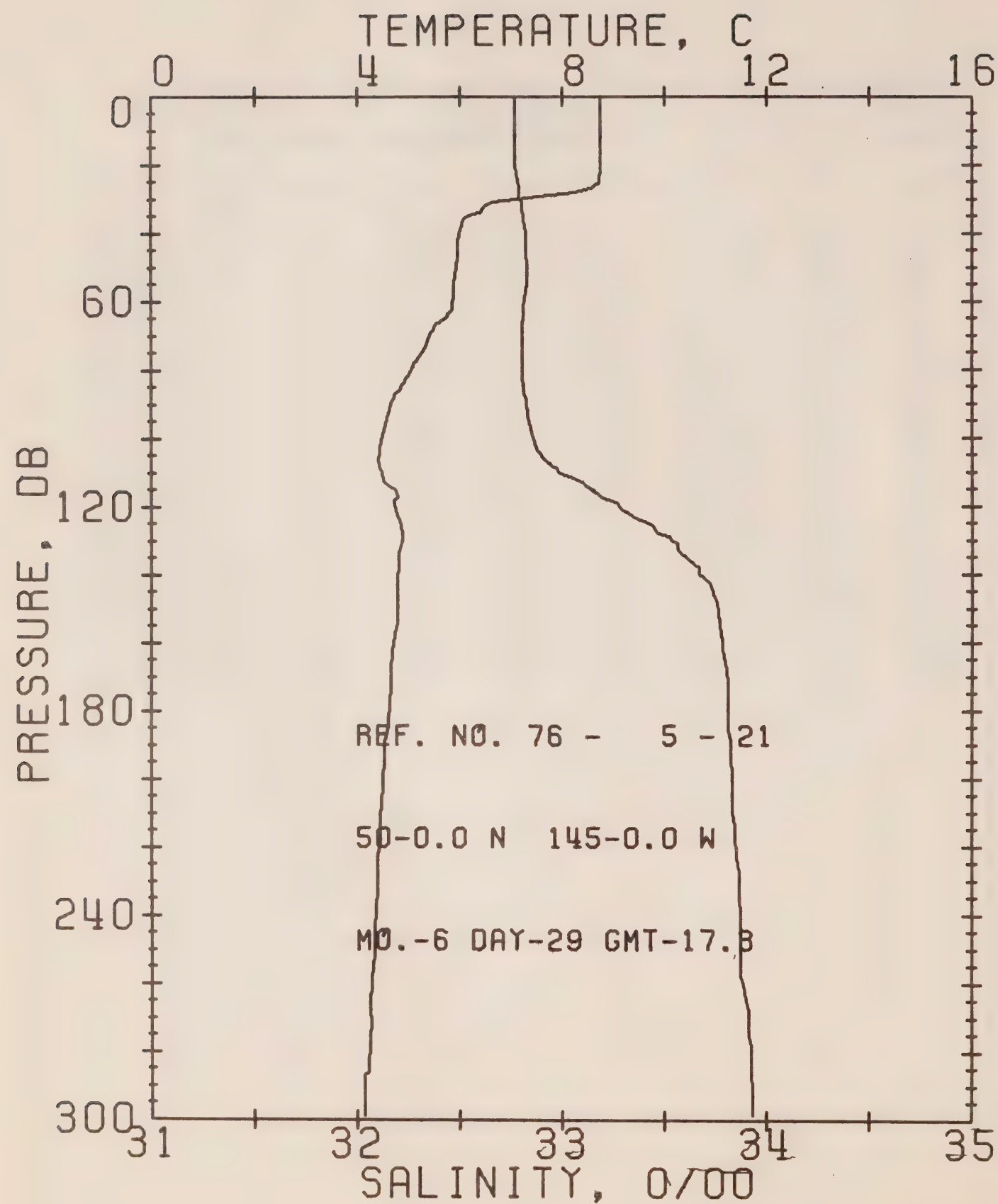
DATE 28/ 6/76

STATION P

POSITION 50- 0.0N. 145- 0.0W GMT 17.5

RESULTS OF STP CAST 212 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.57	32.76	0	25.46	253.3	0.0	0.0	1482.
10	8.58	32.76	10	25.45	253.8	0.25	0.01	1482.
20	8.56	32.76	20	25.46	253.7	0.51	0.05	1482.
30	6.68	32.77	30	25.73	227.8	0.75	0.11	1475.
50	5.86	32.79	50	25.85	216.7	1.19	0.29	1472.
75	5.21	32.80	75	25.93	208.9	1.72	0.63	1470.
100	4.75	32.84	99	26.02	201.0	2.24	1.09	1469.
125	4.84	33.26	124	26.34	170.7	2.70	1.62	1470.
150	4.77	33.72	149	26.71	135.5	3.06	2.12	1471.
175	4.60	33.77	174	26.77	130.4	3.39	2.67	1471.
200	4.39	33.82	199	26.83	125.0	3.71	3.28	1470.
225	4.37	33.85	223	26.86	122.4	4.02	3.95	1471.
250	4.21	33.86	248	26.89	119.8	4.32	4.68	1470.
300	4.12	33.93	298	26.95	114.4	4.91	6.33	1471.
400	3.92	34.05	397	27.06	104.3	6.00	10.21	1472.
500	3.77	34.13	496	27.15	97.1	7.01	14.82	1473.
600	3.53	34.22	595	27.24	89.2	7.94	20.06	1474.
800	3.18	34.33	793	27.36	78.2	9.61	31.92	1476.
1000	2.91	34.41	990	27.45	70.9	11.10	45.59	1478.
1200	2.67	34.46	1188	27.51	65.5	12.47	60.93	1480.
1500	2.35	34.54	1433	27.60	57.8	14.31	86.15	1484.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 21

DATE 29/ 6/76

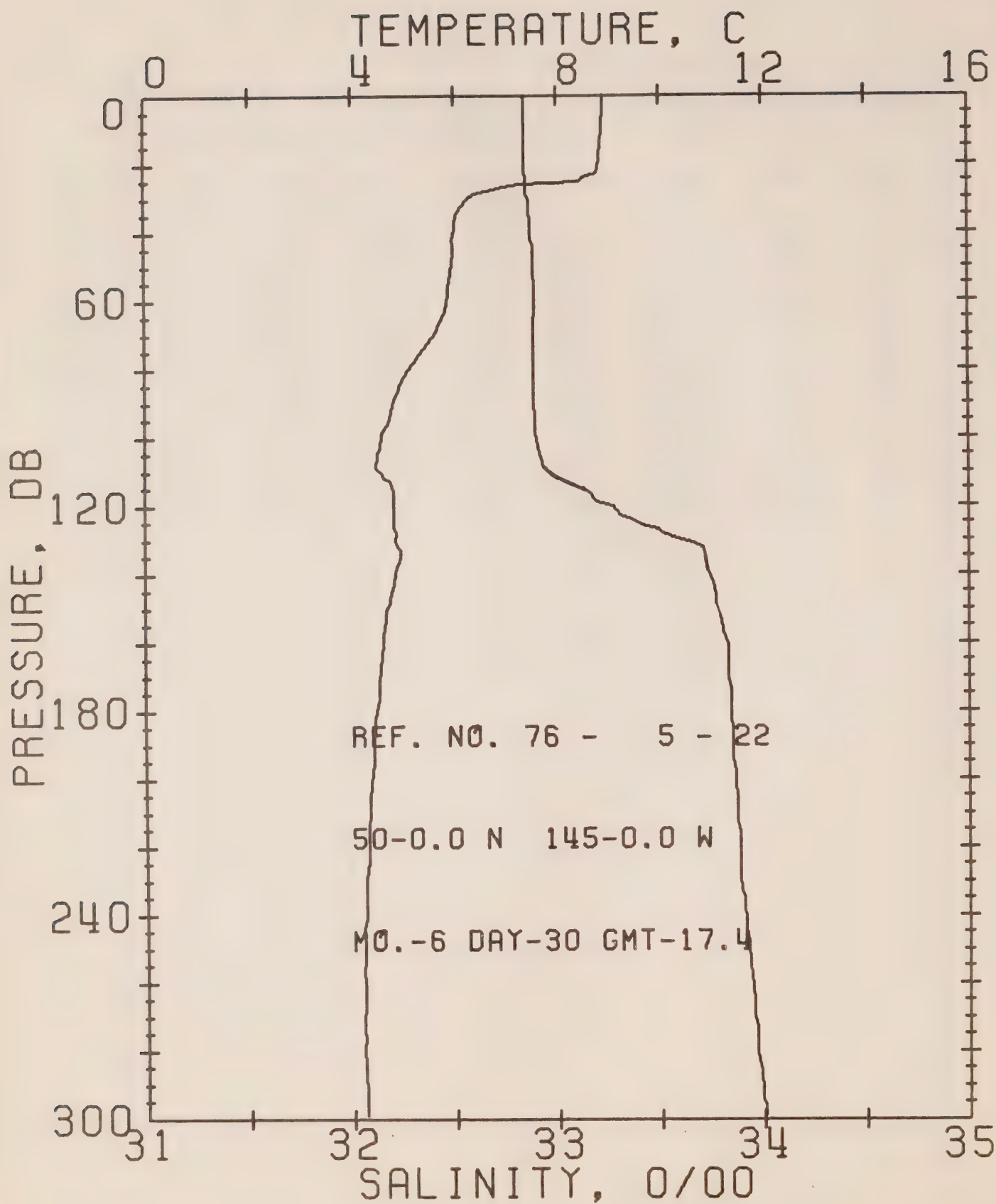
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST 129 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	8.76	32.77	0	25.44	255.3	0.0	0.0	1483.
10	8.76	32.77	10	25.44	255.7	0.26	0.01	1483.
20	8.76	32.77	20	25.44	255.9	0.51	0.05	1483.
30	7.10	32.75	30	25.69	231.7	0.76	0.12	1477.
50	5.92	32.83	50	25.87	214.3	1.20	0.29	1473.
75	5.25	32.80	75	25.93	209.2	1.73	0.63	1470.
100	4.47	32.85	99	26.06	197.0	2.24	1.08	1468.
125	4.85	33.43	124	26.47	158.1	2.69	1.60	1470.
150	4.78	33.75	149	26.74	133.2	3.05	2.10	1471.
175	4.62	33.81	174	26.80	127.7	3.37	2.64	1471.
200	4.49	33.83	199	26.83	125.0	3.69	3.24	1471.
225	4.38	33.85	223	26.86	122.2	4.00	3.91	1471.
250	4.32	33.67	248	26.88	120.6	4.30	4.65	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 22

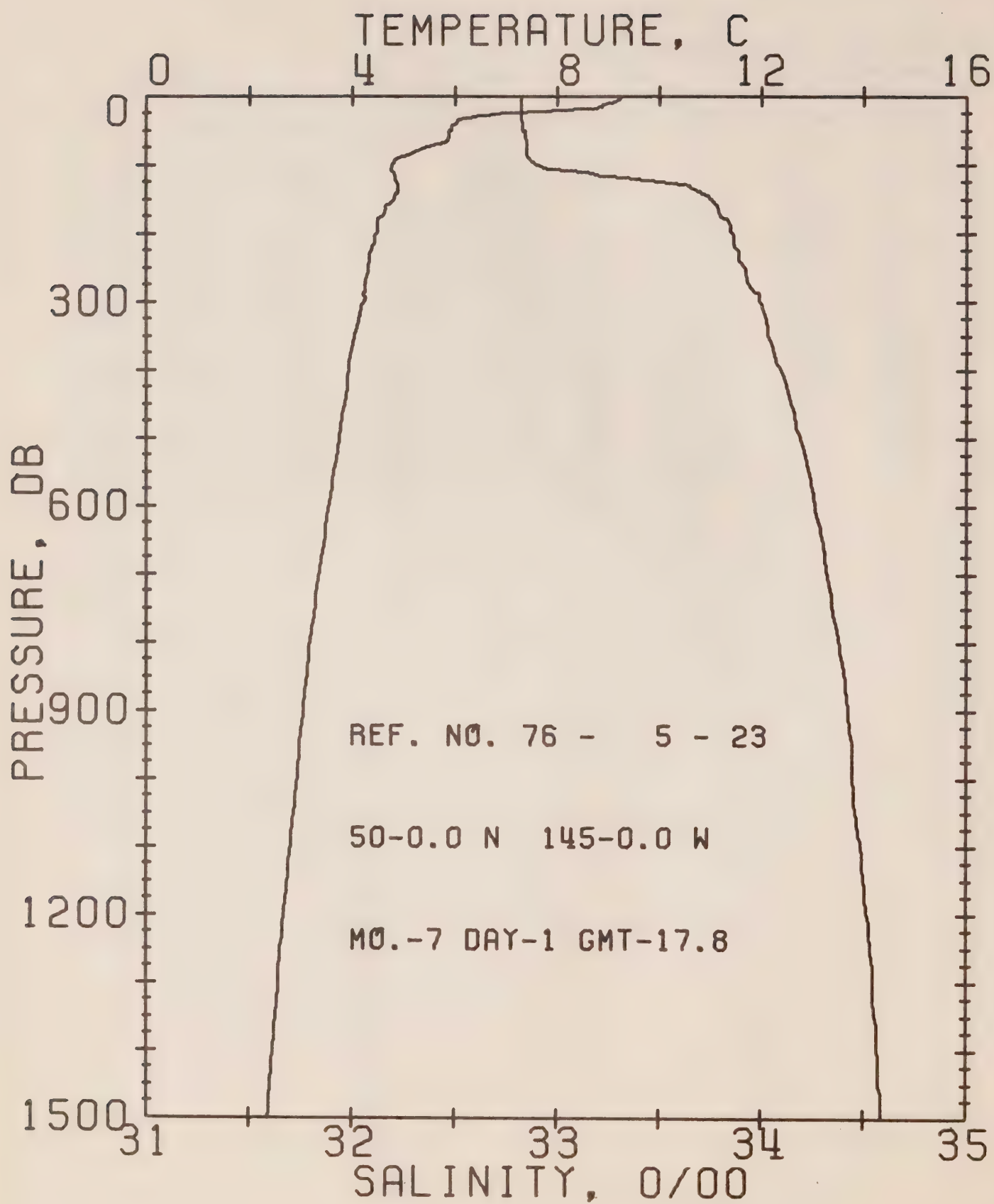
DATE 30/ 6/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.4

RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.90	32.84	0	25.47	252.2	0.0	0.0	1484.
10	8.89	32.84	10	25.47	252.5	0.25	0.01	1484.
20	8.82	32.84	20	25.48	251.6	0.50	0.05	1484.
30	6.29	32.85	30	25.85	216.6	0.74	0.11	1474.
50	5.94	32.88	50	25.91	210.8	1.17	0.28	1473.
75	5.35	32.88	75	25.98	204.3	1.69	0.62	1471.
100	4.56	32.89	99	26.08	195.2	2.19	1.06	1468.
125	4.80	33.39	124	26.45	160.2	2.64	1.58	1470.
150	4.67	33.77	149	26.76	130.9	2.99	2.06	1470.
175	4.50	33.84	174	26.84	124.2	3.30	2.59	1470.
200	4.35	33.86	199	26.87	121.2	3.61	3.17	1470.
225	4.28	33.88	223	26.89	119.3	3.91	3.82	1470.
250	4.22	33.92	248	26.93	115.7	4.20	4.53	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 23

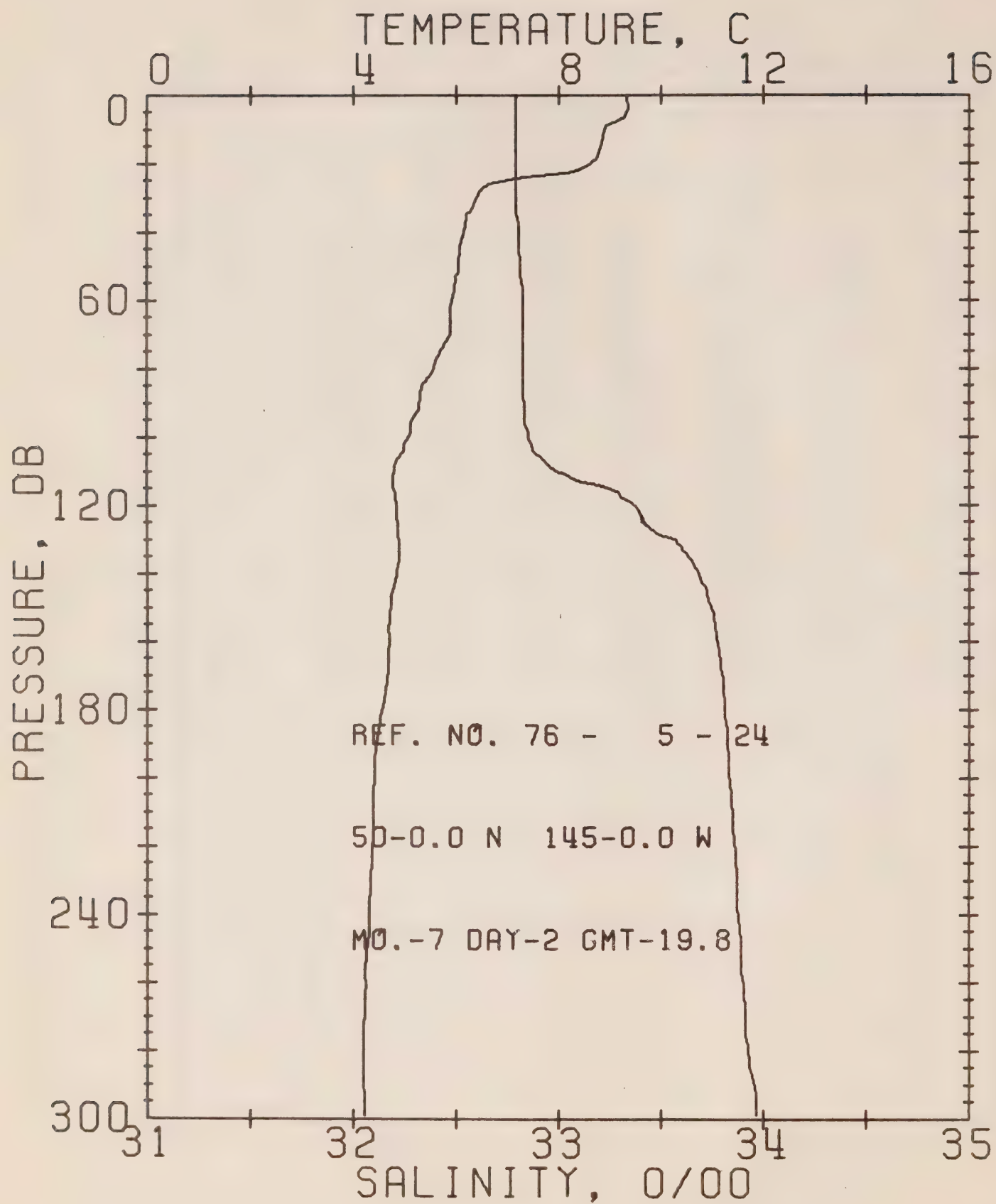
DATE 1/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.8

RESULTS OF STP CAST 209 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.22	32.82	0	25.40	258.4	0.0	0.0	1485.
10	9.00	32.82	10	25.44	255.5	0.26	0.01	1484.
20	7.90	32.82	20	25.60	239.9	0.51	0.05	1480.
30	6.41	32.82	30	25.80	220.7	0.74	0.11	1474.
50	5.92	32.83	50	25.87	214.3	1.17	0.29	1473.
75	5.44	32.85	75	25.95	207.5	1.70	0.62	1471.
100	4.75	32.90	99	26.06	196.6	2.21	1.07	1465.
125	4.85	33.53	124	26.55	150.7	2.65	1.58	1470.
150	4.79	33.75	149	26.73	134.0	3.00	2.07	1471.
175	4.55	33.80	174	26.80	127.6	3.33	2.61	1470.
200	4.46	33.85	199	26.85	122.9	3.64	3.20	1471.
225	4.34	33.88	223	26.85	119.8	3.94	3.86	1470.
250	4.29	33.91	248	26.92	117.0	4.24	4.58	1471.
300	4.22	33.95	298	26.99	111.0	4.81	6.18	1471.
400	3.91	34.05	397	27.10	101.1	5.87	9.95	1472.
500	3.73	34.19	496	27.15	92.6	6.83	14.38	1473.
600	3.53	34.26	595	27.27	86.3	7.73	19.37	1474.
800	3.17	34.38	793	27.40	74.8	9.33	30.79	1476.
1000	2.92	34.44	990	27.47	68.7	10.75	43.82	1478.
1200	2.67	34.51	1188	27.55	61.9	12.06	58.44	1480.
1500	2.35	34.58	1483	27.63	54.9	13.80	82.32	1484.



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REFERENCE NO. 76- 5- 24

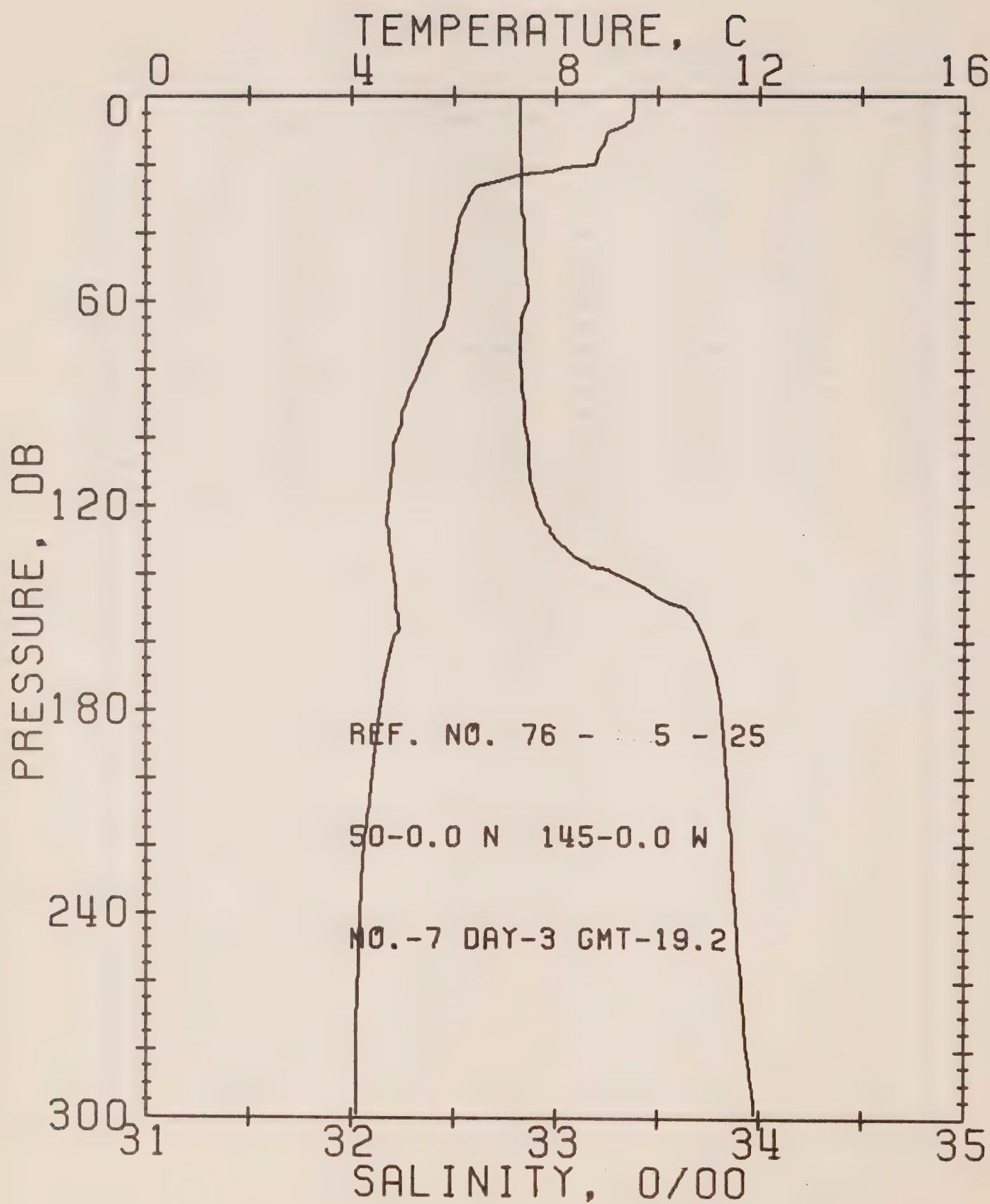
DATE 2/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.8

RESULTS OF STP CAST 119 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.33	32.79	0	25.36	262.3	0.0	0.0	1485.
10	8.87	32.79	10	25.43	255.8	0.26	0.01	1484.
20	8.62	32.79	20	25.47	252.4	0.52	0.05	1483.
30	8.37	32.79	30	25.79	222.5	0.75	0.11	1474.
50	6.03	32.81	50	25.85	217.1	1.19	0.29	1473.
75	5.68	32.82	75	25.90	212.6	1.73	0.63	1472.
100	5.04	32.85	99	25.99	203.4	2.25	1.10	1470.
125	4.85	33.41	124	26.46	159.6	2.70	1.61	1470.
150	4.70	33.74	149	26.74	133.5	3.06	2.11	1471.
175	4.60	33.80	174	26.80	128.0	3.38	2.65	1471.
200	4.39	33.83	199	26.84	123.9	3.70	3.25	1470.
225	4.33	33.86	223	26.87	121.1	4.00	3.92	1470.
250	4.25	33.89	248	26.90	118.4	4.30	4.64	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 25

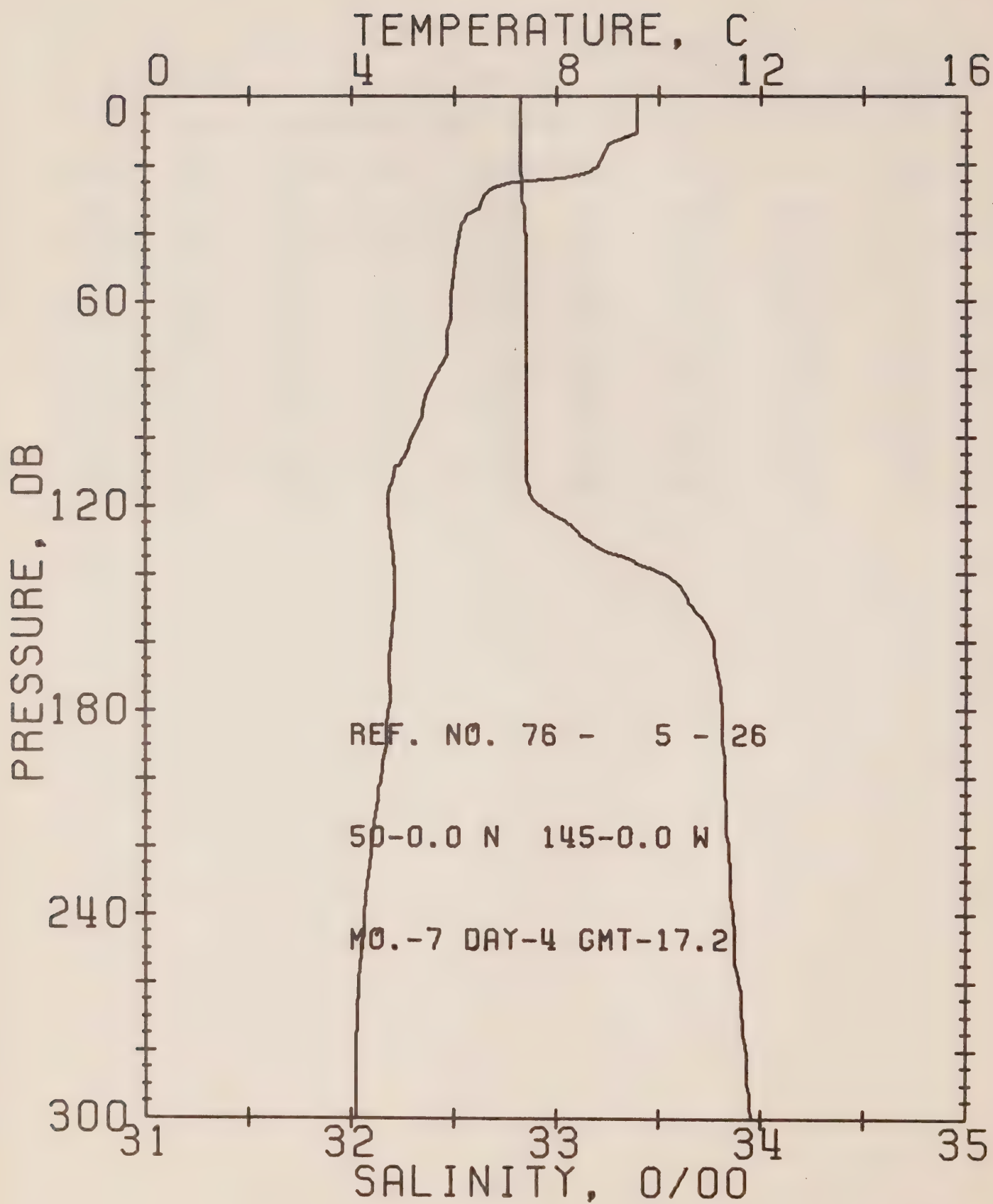
DATE 3/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.2

RESULTS OF STP CAST 103 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.51	32.82	0	25.36	262.9	0.0	0.0	1486.
10	9.08	32.82	10	25.42	256.7	0.26	0.01	1484.
20	8.76	32.83	20	25.48	251.4	0.52	0.05	1483.
30	6.26	32.83	30	25.83	218.2	0.74	0.11	1474.
50	5.94	32.85	50	25.89	213.0	1.17	0.29	1473.
75	5.44	32.82	75	25.92	209.8	1.70	0.62	1471.
100	4.86	32.85	99	26.02	201.2	2.22	1.08	1469.
125	4.67	32.94	124	26.11	192.9	2.71	1.65	1469.
150	4.86	33.63	149	26.63	143.4	3.15	2.25	1471.
175	4.58	33.80	174	26.80	128.0	3.48	2.81	1471.
200	4.39	33.84	199	26.85	123.4	3.80	3.41	1470.
225	4.22	33.86	223	26.88	120.0	4.10	4.07	1470.
250	4.13	33.89	248	26.92	117.2	4.40	4.78	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 26

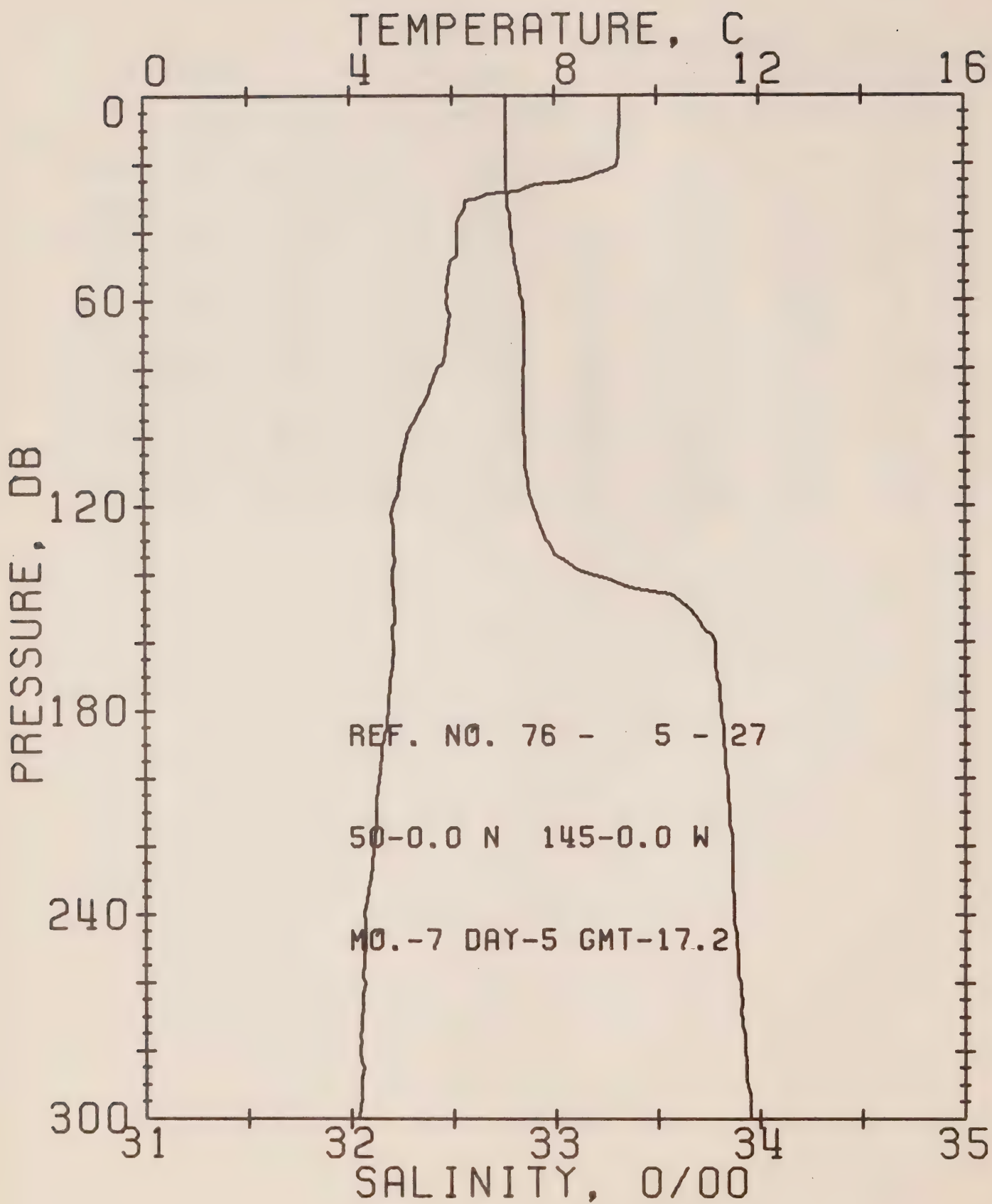
DATE 4/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 125 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.57	32.82	0	25.35	263.8	0.0	0.0	1486.
10	9.57	32.82	10	25.35	264.2	0.26	0.01	1486.
20	8.80	32.82	20	25.47	252.7	0.52	0.05	1483.
30	6.55	32.83	30	25.79	221.7	0.76	0.11	1475.
50	5.98	32.85	50	25.88	213.6	1.19	0.29	1473.
75	5.83	32.85	75	25.90	212.0	1.72	0.63	1473.
100	5.16	32.85	99	25.98	204.7	2.24	1.09	1470.
125	4.72	33.04	124	26.18	185.6	2.74	1.66	1469.
150	4.81	33.66	149	26.66	140.9	3.14	2.22	1471.
175	4.74	33.80	174	26.78	129.7	3.47	2.77	1471.
200	4.56	33.82	199	26.81	126.5	3.79	3.38	1471.
225	4.34	33.84	223	26.86	122.5	4.11	4.06	1470.
250	4.19	33.87	248	26.89	119.3	4.41	4.79	1470.
300	4.08	33.95	298	26.97	112.5	4.99	6.41	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 27

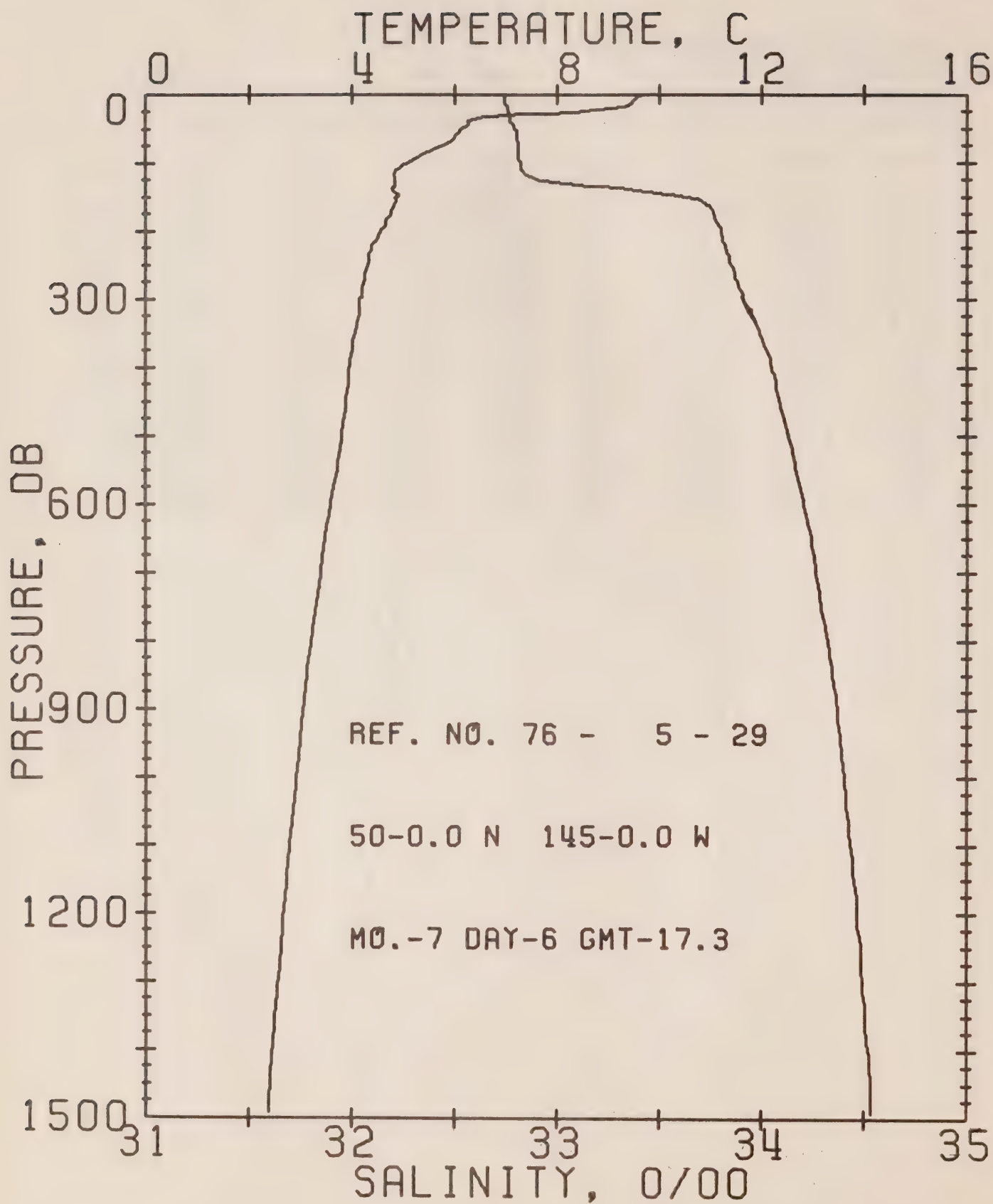
DATE 5/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 142 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	9.27	32.76	0	25.35	263.7	0.0	0.0	1485.
10	9.26	32.76	10	25.35	264.0	0.26	0.01	1485.
20	9.21	32.76	20	25.36	263.3	0.53	0.05	1485.
30	6.53	32.77	30	25.75	225.9	0.78	0.12	1475.
50	5.94	32.80	50	25.85	216.4	1.21	0.30	1473.
75	5.84	32.85	75	25.90	212.1	1.75	0.64	1473.
100	5.09	32.85	99	25.99	204.2	2.27	1.10	1470.
125	4.81	32.91	124	26.07	196.4	2.77	1.68	1470.
150	4.85	33.65	149	26.65	141.9	3.22	2.29	1471.
175	4.73	33.80	174	26.78	129.6	3.55	2.85	1471.
200	4.54	33.84	199	26.83	124.8	3.87	3.45	1471.
225	4.39	33.86	223	26.86	121.9	4.18	4.12	1471.
250	4.26	33.88	248	26.90	119.0	4.48	4.85	1471.
300	4.13	33.95	298	26.96	113.1	5.06	6.48	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 29

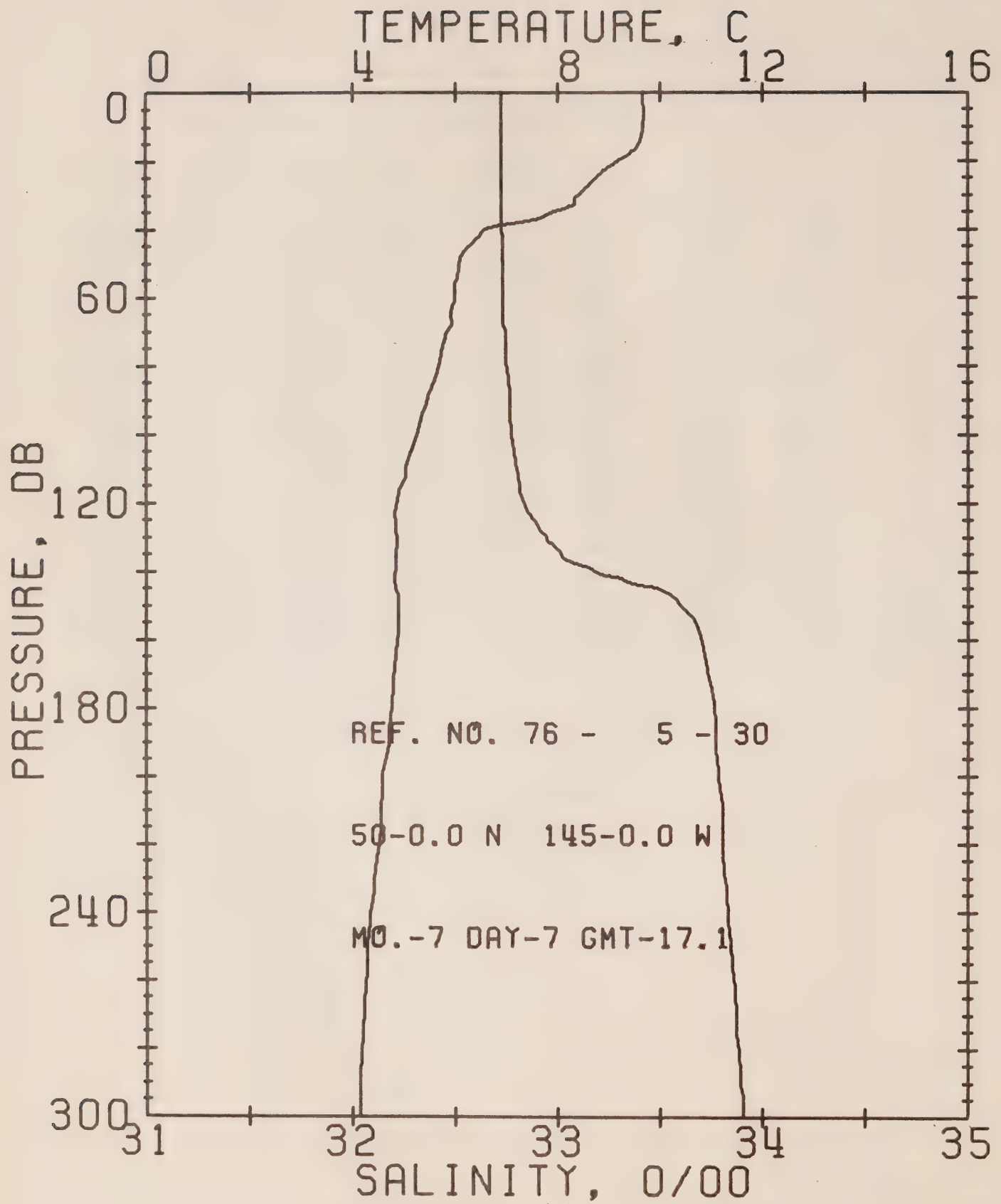
DATE 6/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 224 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.71	32.74	0	25.26	271.9	0.0	0.0	1486.
10	9.48	32.74	10	25.30	268.7	0.27	0.01	1486.
20	9.02	32.75	20	25.38	261.2	0.54	0.05	1484.
30	7.07	32.76	30	25.67	233.5	0.79	0.12	1477.
50	6.15	32.79	50	25.81	220.0	1.24	0.30	1474.
75	5.75	32.81	75	25.88	214.1	1.78	0.65	1472.
100	5.12	32.82	99	25.96	206.5	2.30	1.11	1470.
125	4.83	32.91	124	26.06	196.8	2.81	1.70	1470.
150	4.89	33.61	149	26.62	144.9	3.23	2.29	1471.
175	4.73	33.76	174	26.75	132.5	3.57	2.85	1471.
200	4.56	33.80	199	26.80	128.0	3.90	3.47	1471.
225	4.38	33.82	223	26.83	124.8	4.22	4.15	1471.
250	4.29	33.85	248	26.87	121.8	4.52	4.90	1471.
300	4.13	33.93	298	26.95	114.5	5.12	6.56	1471.
400	3.93	34.05	397	27.06	104.7	6.21	10.47	1472.
500	3.79	34.13	496	27.14	97.7	7.23	15.11	1473.
600	3.57	34.20	595	27.22	91.0	8.17	20.39	1474.
800	3.19	34.32	793	27.35	79.5	9.87	32.48	1476.
1000	2.91	34.40	990	27.44	71.6	11.38	46.27	1478.
1200	2.66	34.46	1188	27.51	65.7	12.75	61.63	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 30

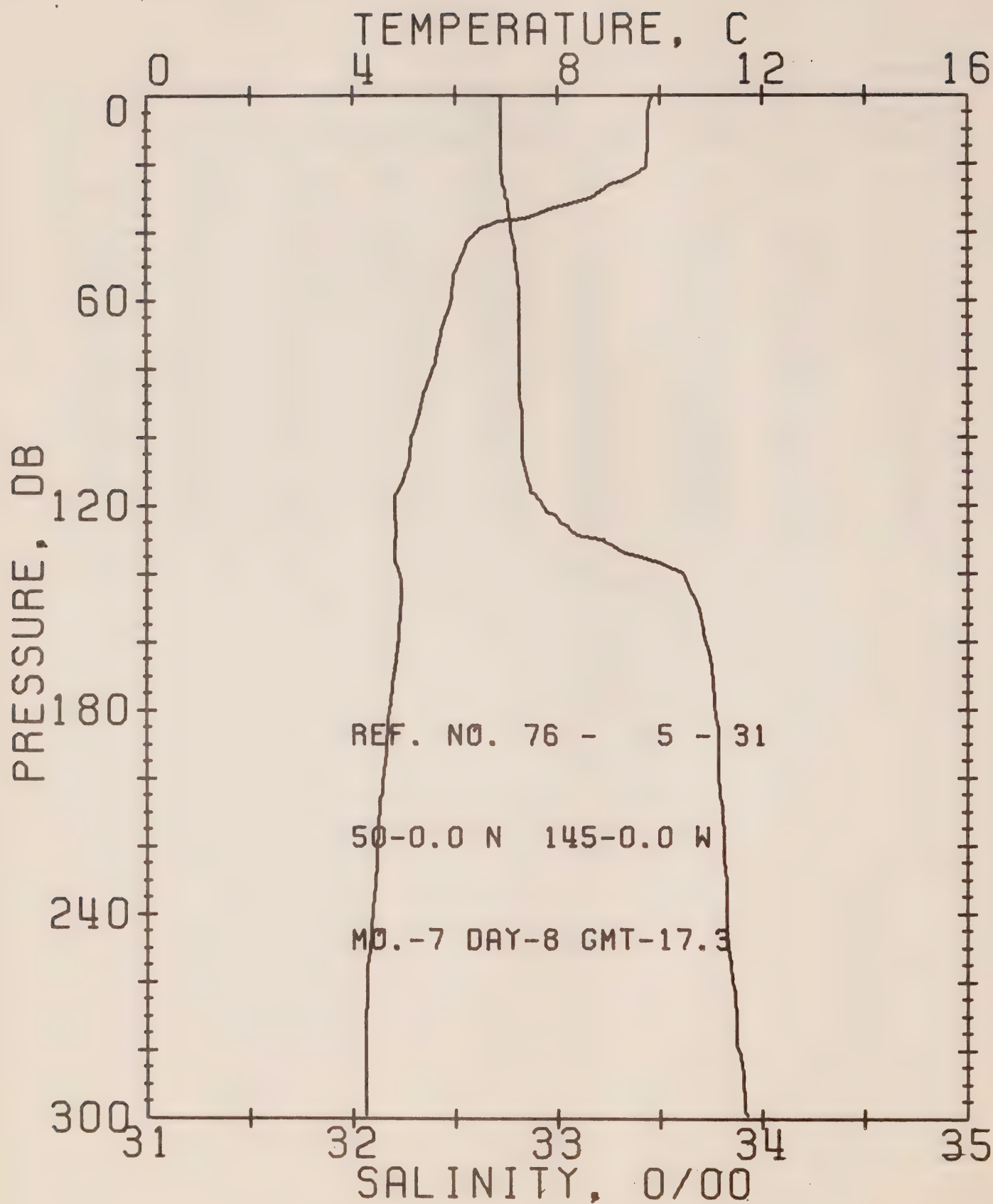
DATE 7/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.1

RESULTS OF STP CAST 108 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	9.66	32.72	0	25.25	272.6	0.0	0.0	1486.
10	9.66	32.72	10	25.25	273.0	0.27	0.01	1486.
20	9.16	32.72	20	25.33	265.5	0.54	0.06	1485.
30	8.39	32.72	30	25.45	254.4	0.80	0.12	1482.
50	6.06	32.73	50	25.78	223.4	1.28	0.31	1473.
75	5.71	32.74	75	25.83	219.0	1.83	0.67	1472.
100	5.22	32.77	99	25.91	211.4	2.37	1.15	1471.
125	4.82	32.88	124	26.04	199.0	2.88	1.74	1469.
150	4.87	33.59	149	26.60	146.2	3.33	2.36	1471.
175	4.76	33.75	174	26.73	133.9	3.68	2.93	1471.
200	4.56	33.78	199	26.78	129.5	4.00	3.56	1471.
225	4.44	33.80	223	26.81	126.7	4.32	4.25	1471.
250	4.28	33.84	248	26.86	122.3	4.63	5.00	1471.
300	4.13	33.90	298	26.92	116.8	5.23	6.67	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 31

DATE 8/ 7/76

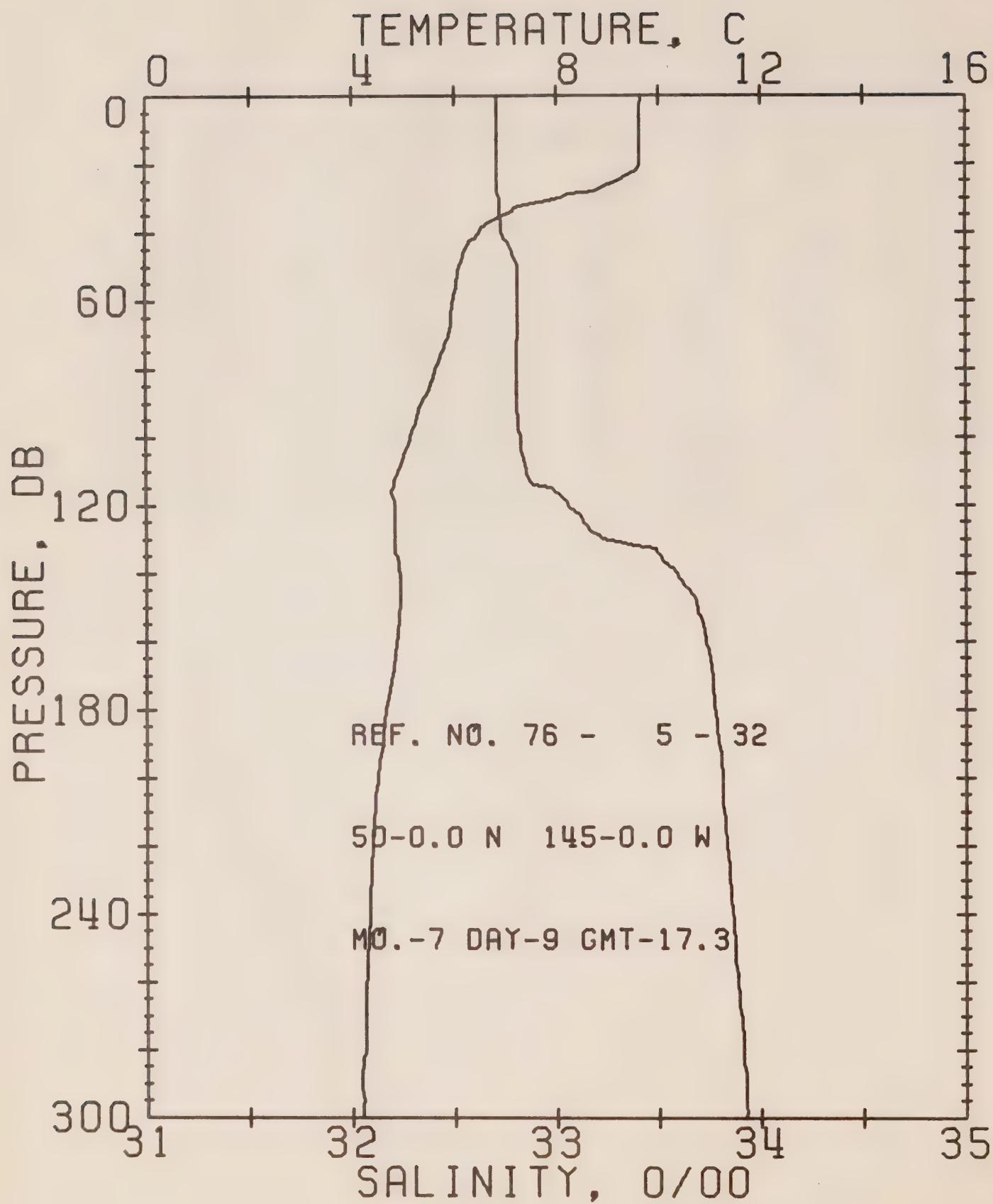
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST 117 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.87	32.72	0	25.22	275.9	0.0	0.0	1487.
10	9.77	32.72	10	25.24	274.7	0.27	0.01	1487.
20	9.72	32.72	20	25.24	274.1	0.55	0.06	1487.
30	8.64	32.74	30	25.43	256.5	0.82	0.12	1483.
50	6.03	32.79	50	25.83	218.3	1.28	0.31	1473.
75	5.61	32.81	75	25.90	212.6	1.81	0.65	1472.
100	5.12	32.82	99	25.96	206.5	2.34	1.12	1470.
125	4.82	33.01	124	26.14	189.3	2.84	1.70	1470.
150	4.91	33.68	149	26.67	140.1	3.24	2.25	1471.
175	4.73	33.75	174	26.74	133.0	3.58	2.81	1471.
200	4.58	33.78	199	26.78	129.6	3.90	3.44	1471.
225	4.45	33.81	223	26.82	126.1	4.22	4.13	1471.
250	4.31	33.83	248	26.85	123.5	4.53	4.88	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 32

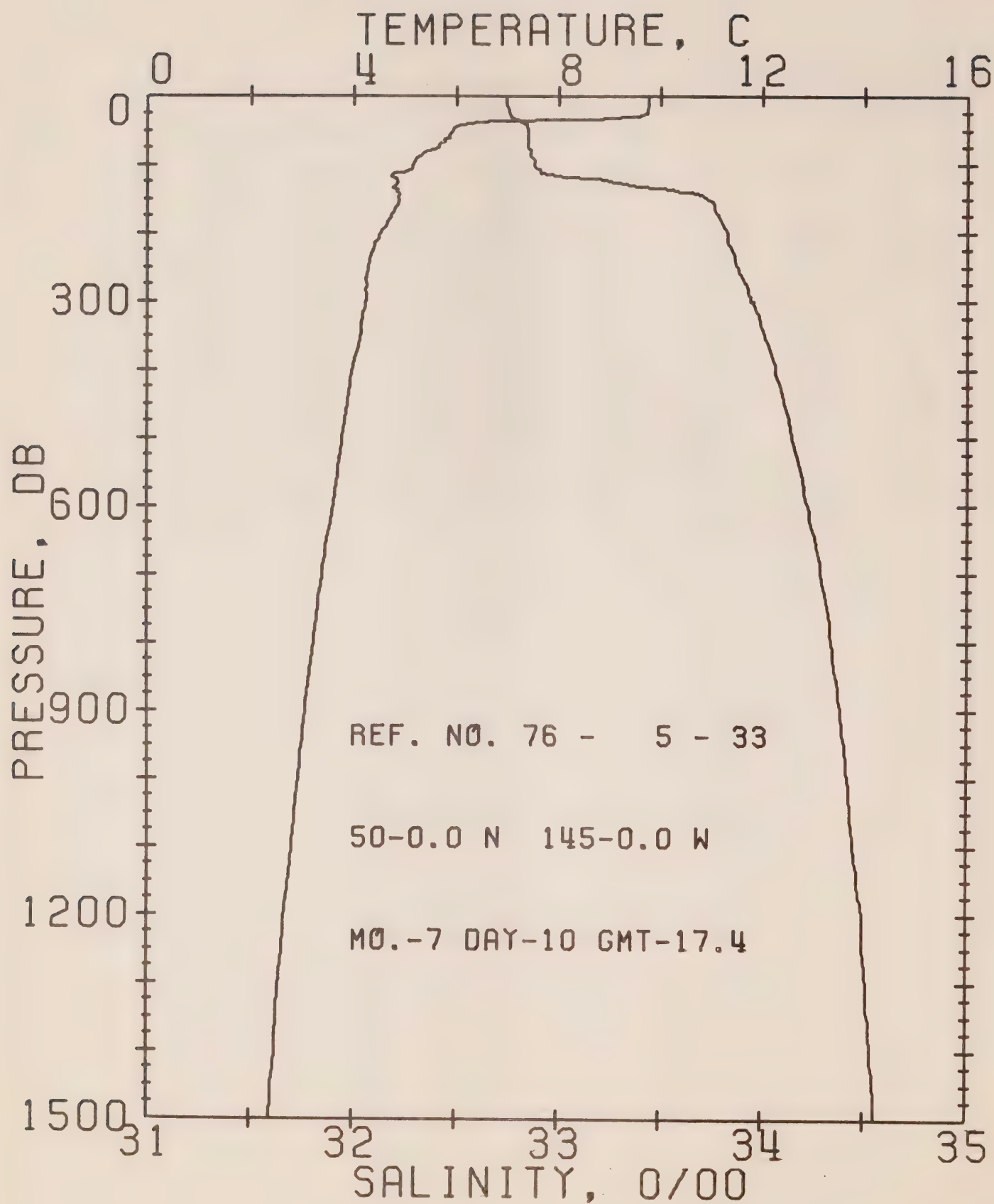
DATE 9/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 137 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.65	32.71	0	25.25	273.2	0.0	0.0	1486.
10	9.64	32.71	10	25.25	273.4	0.27	0.01	1486.
20	9.63	32.71	20	25.25	273.4	0.55	0.06	1486.
30	8.04	32.72	30	25.50	249.5	0.81	0.12	1481.
50	6.08	32.81	50	25.84	217.7	1.27	0.31	1473.
75	5.75	32.80	75	25.87	214.8	1.81	0.65	1472.
100	5.12	32.82	99	25.96	206.5	2.34	1.12	1470.
125	4.84	33.13	124	26.24	180.5	2.83	1.68	1470.
150	4.93	33.68	149	26.67	140.1	3.22	2.23	1471.
175	4.70	33.76	174	26.75	132.0	3.56	2.79	1471.
200	4.48	33.81	199	26.81	126.4	3.88	3.40	1471.
225	4.34	33.84	223	26.85	123.0	4.19	4.08	1470.
250	4.28	33.87	248	26.88	120.2	4.50	4.82	1471.
300	4.18	33.92	298	26.93	115.8	5.08	6.46	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 33

DATE 10/ 7/76

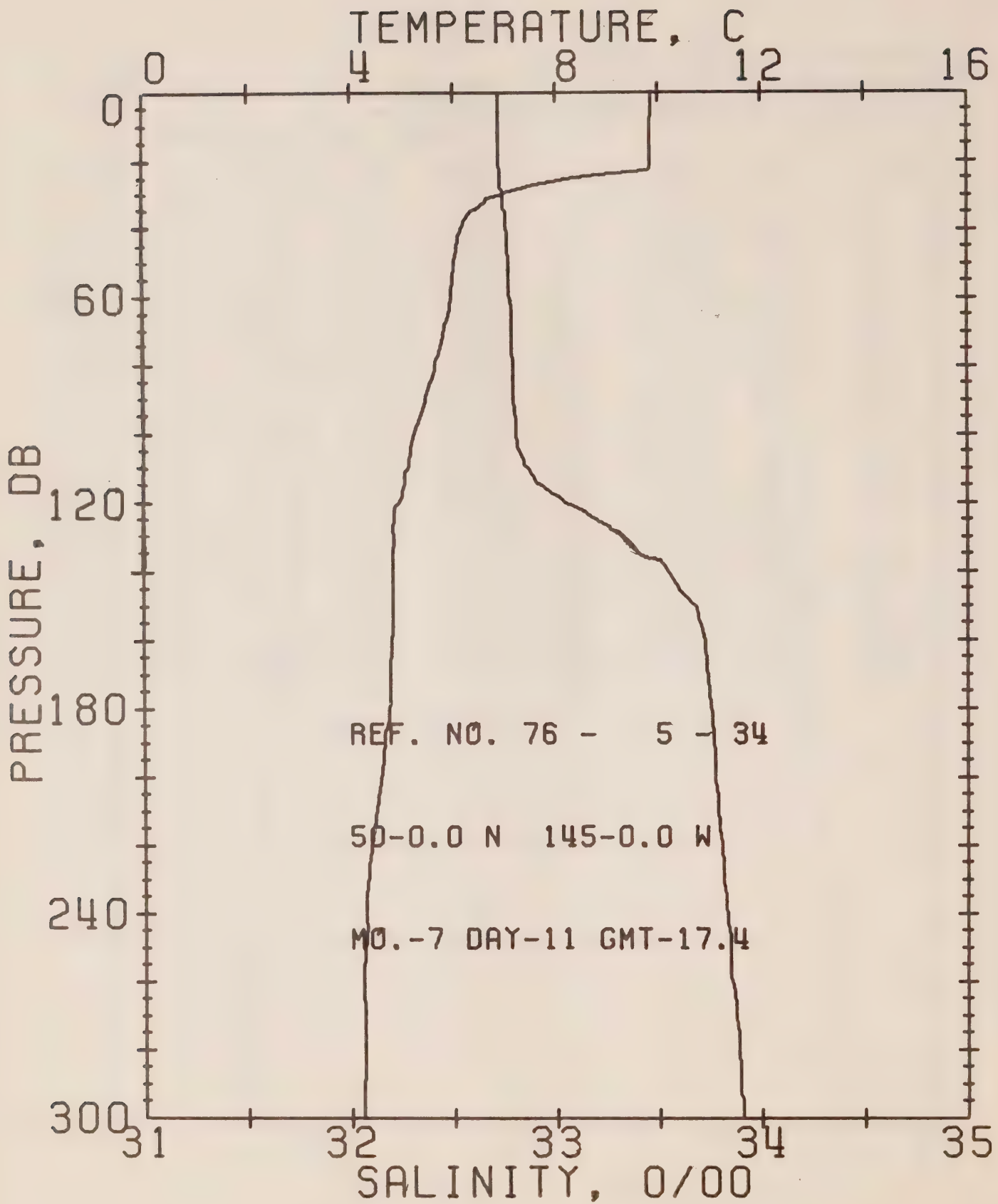
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.4

RESULTS OF STP CAST 235 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.75	32.74	0	25.25	272.5	0.0	0.0	1487.
10	9.76	32.74	10	25.25	273.1	0.27	0.01	1487.
20	9.74	32.75	20	25.26	272.2	0.55	0.06	1487.
30	9.56	32.76	30	25.30	268.9	0.82	0.12	1486.
50	5.91	32.85	50	25.89	212.7	1.27	0.31	1473.
75	5.64	32.85	75	25.92	209.8	1.80	0.65	1472.
100	5.14	32.88	99	26.01	202.3	2.32	1.10	1470.
125	4.85	33.26	124	26.34	170.9	2.80	1.65	1470.
150	4.87	33.73	149	26.71	136.1	3.17	2.18	1471.
175	4.72	33.78	174	26.77	130.9	3.51	2.73	1471.
200	4.51	33.82	199	26.82	125.6	3.83	3.34	1471.
225	4.35	33.85	223	26.86	122.5	4.14	4.01	1470.
250	4.27	33.87	248	26.89	119.8	4.44	4.75	1471.
300	4.24	33.94	298	26.94	115.0	5.02	6.38	1471.
400	3.96	34.06	397	27.07	103.9	6.11	10.26	1472.
500	3.76	34.14	496	27.15	96.7	7.11	14.84	1473.
600	3.59	34.22	595	27.23	89.7	8.04	20.05	1474.
800	3.21	34.33	793	27.36	78.6	9.71	31.94	1476.
1000	2.92	34.41	990	27.45	70.8	11.20	45.57	1478.
1200	2.66	34.49	1188	27.53	63.7	12.56	60.72	1480.
1500	2.37	34.55	1483	27.61	57.4	14.37	85.68	1484.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 34

DATE 11/ 7/76

STATION P

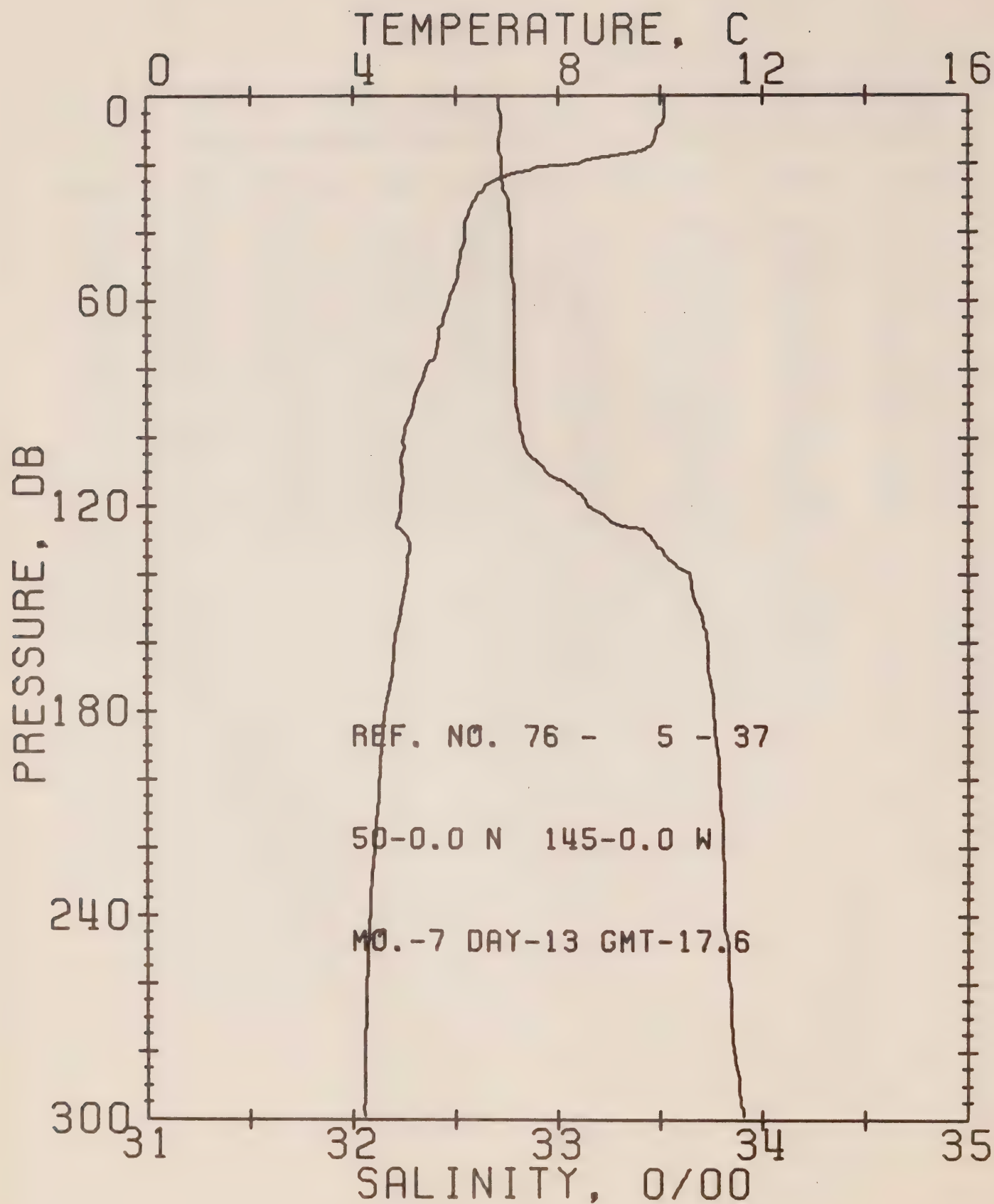
POSITION 50- 0.0N, 145- 0.0W

GMT 17.4

RESULTS OF STP CAST

131 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.86	32.72	0	25.22	275.7	0.0	0.0	1487.
10	9.85	32.72	10	25.22	276.0	0.28	0.01	1487.
20	9.85	32.72	20	25.22	276.1	0.55	0.06	1487.
30	6.68	32.74	30	25.68	232.5	0.81	0.12	1476.
50	6.00	32.77	50	25.82	219.8	1.25	0.30	1473.
75	5.72	32.78	75	25.86	216.1	1.80	0.65	1472.
100	5.22	32.80	99	25.94	208.9	2.33	1.12	1471.
125	4.83	33.20	124	26.29	175.2	2.82	1.69	1470.
150	4.80	33.66	149	26.66	140.2	3.22	2.23	1471.
175	4.74	33.74	174	26.73	134.2	3.56	2.80	1471.
200	4.57	33.77	199	26.77	130.3	3.89	3.43	1471.
225	4.34	33.81	223	26.83	125.3	4.21	4.12	1470.
250	4.24	33.84	248	26.86	122.0	4.52	4.87	1470.
300	4.21	33.90	298	26.91	117.6	5.11	6.54	1471.



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REFERENCE NO. 76- 5- 37

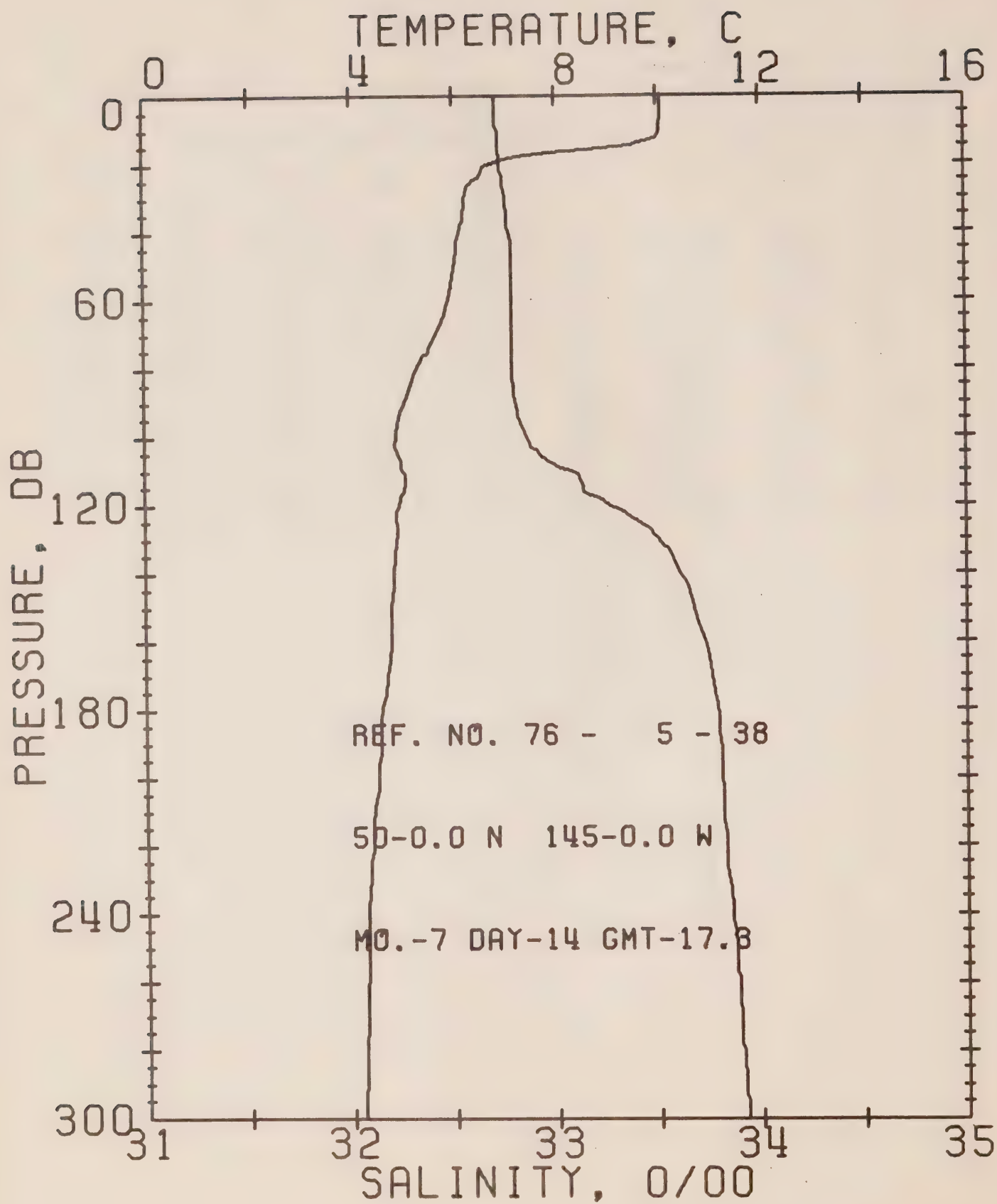
DATE 13/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.6

RESULTS OF STP CAST 137 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.09	32.71	0	25.17	280.1	0.0	0.0	1488.
10	9.92	32.72	10	25.21	277.1	0.28	0.01	1487.
20	8.39	32.72	20	25.45	254.2	0.55	0.06	1482.
30	6.39	32.74	30	25.75	226.1	0.79	0.11	1474.
50	6.02	32.77	50	25.81	220.0	1.23	0.30	1473.
75	5.60	32.78	75	25.87	214.6	1.77	0.64	1472.
100	4.97	32.82	99	25.98	204.9	2.30	1.11	1470.
125	4.84	33.27	124	26.35	170.0	2.77	1.65	1470.
150	4.92	33.68	149	26.66	140.4	3.15	2.18	1471.
175	4.65	33.75	174	26.75	132.7	3.49	2.74	1471.
200	4.50	33.78	199	26.79	128.8	3.82	3.36	1471.
225	4.36	33.81	223	26.82	125.6	4.13	4.05	1470.
250	4.28	33.83	248	26.85	123.2	4.45	4.81	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 38

DATE 14/ 7/76

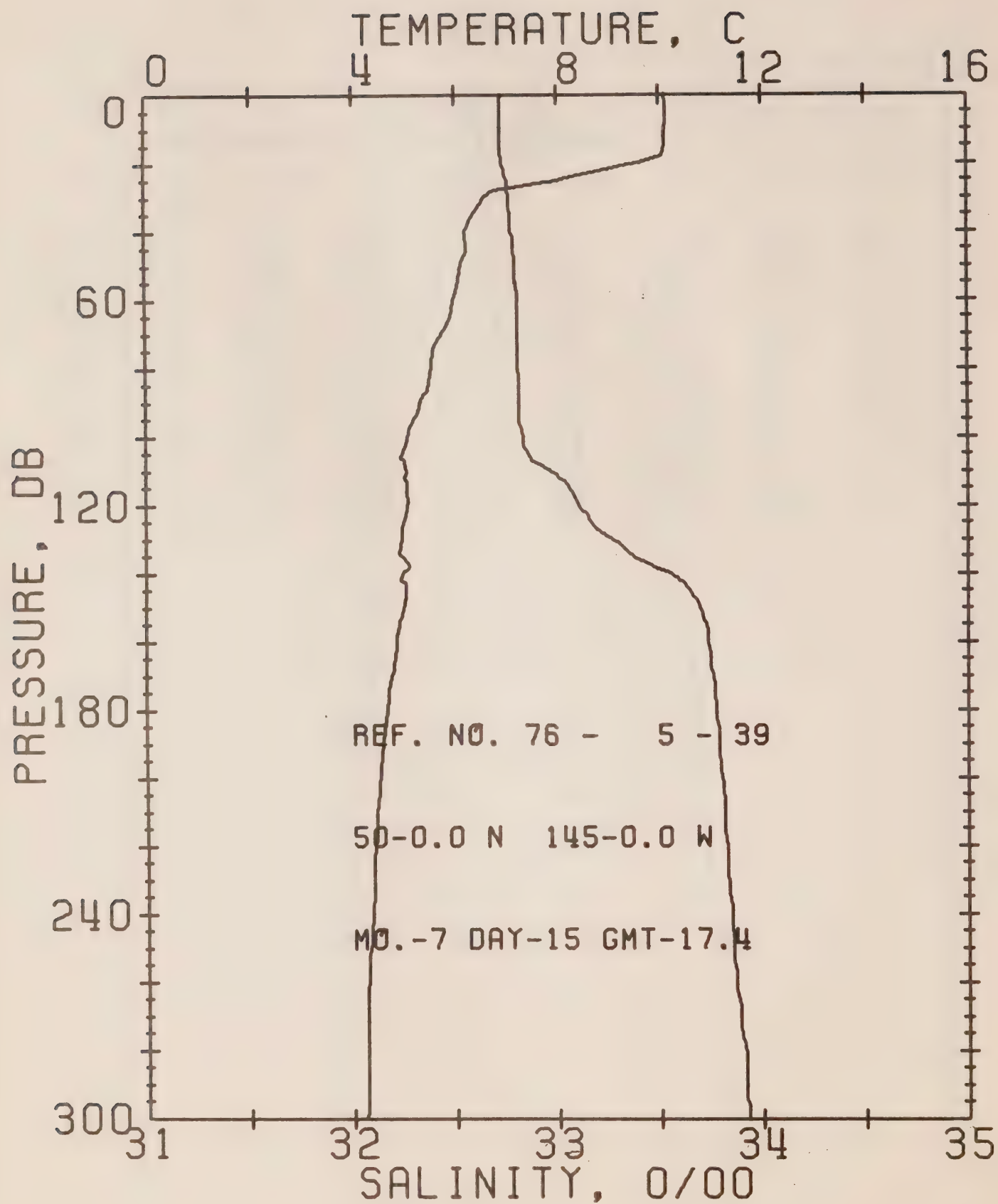
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST 130 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SJUND
0	10.09	32.71	0	25.17	280.1	0.0	0.0	1488.
10	10.05	32.71	10	25.18	279.6	0.28	0.01	1488.
20	6.76	32.73	20	25.69	231.7	0.54	0.05	1475.
30	6.21	32.75	30	25.78	223.5	0.77	0.11	1473.
50	6.01	32.78	50	25.82	219.1	1.21	0.29	1473.
75	5.50	32.78	75	25.89	213.5	1.75	0.64	1471.
100	4.85	32.85	99	26.01	201.4	2.27	1.10	1469.
125	4.86	33.39	124	26.44	160.9	2.73	1.62	1470.
150	4.76	33.67	149	26.67	139.3	3.10	2.14	1471.
175	4.63	33.77	174	26.77	130.7	3.44	2.70	1471.
200	4.47	33.80	199	26.81	127.1	3.76	3.31	1470.
225	4.32	33.82	223	26.84	124.2	4.07	3.99	1470.
250	4.27	33.87	248	26.88	120.1	4.38	4.73	1471.
300	4.20	33.92	298	26.93	116.0	4.57	6.38	1471.



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REFERENCE NO. 76- 5- 39

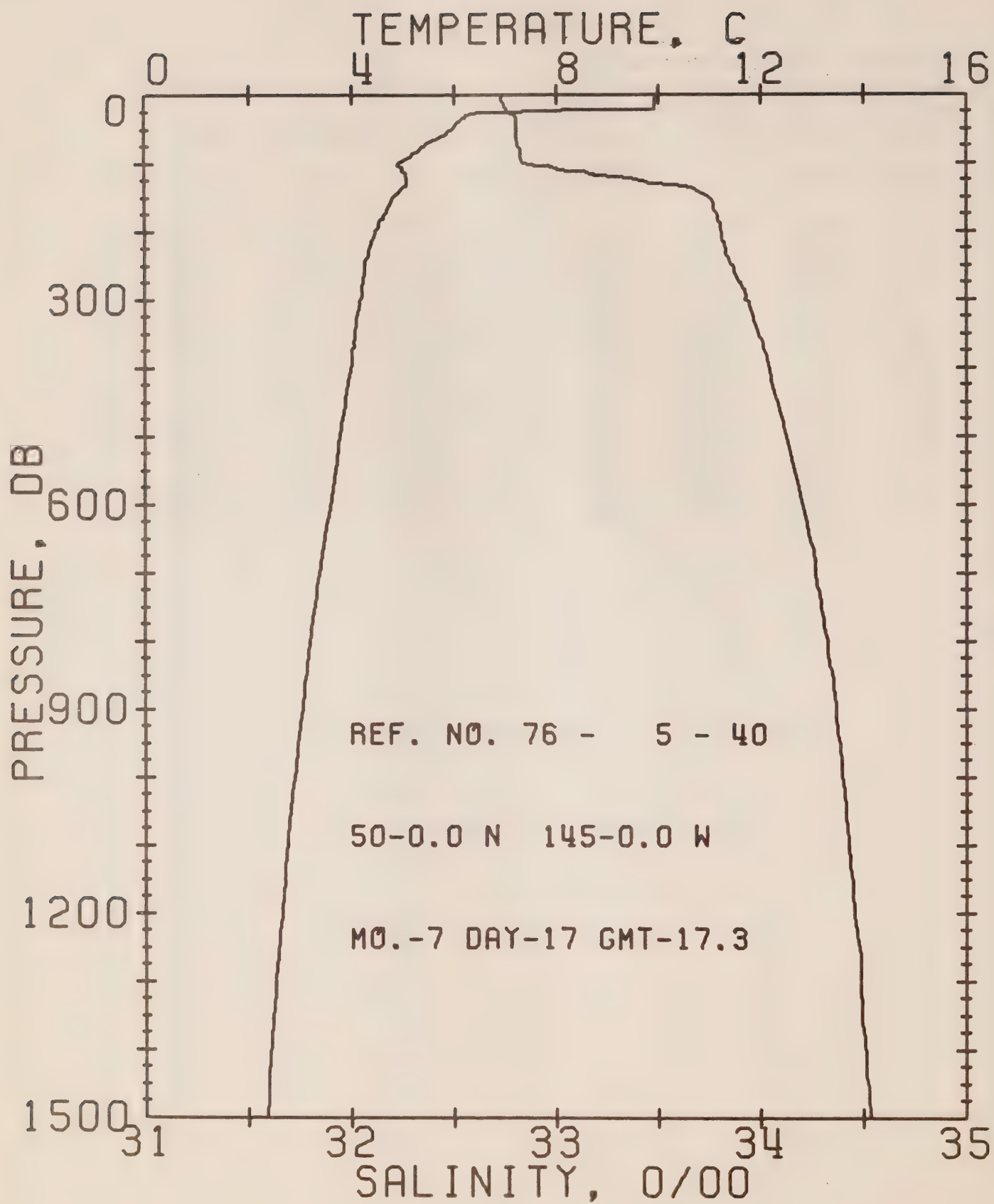
DATE 15/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.4

RESULTS OF STP CAST 135 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.11	32.72	0	25.18	279.6	0.0	0.0	1488.
10	10.11	32.72	10	25.18	280.1	0.28	0.01	1488.
20	9.59	32.73	20	25.27	271.3	0.56	0.06	1486.
30	6.35	32.76	30	25.74	226.9	0.81	0.12	1475.
50	6.09	32.79	50	25.82	219.3	1.25	0.30	1473.
75	5.54	32.80	75	25.90	212.4	1.79	0.64	1472.
100	5.05	32.83	99	25.97	205.3	2.32	1.11	1470.
125	4.96	33.19	124	26.27	177.3	2.80	1.66	1470.
150	4.96	33.69	149	26.67	140.0	3.19	2.22	1472.
175	4.66	33.76	174	26.76	131.8	3.53	2.78	1471.
200	4.49	33.79	199	26.80	127.6	3.86	3.40	1471.
225	4.37	33.82	223	26.83	124.7	4.17	4.08	1471.
250	4.29	33.85	248	26.87	121.8	4.48	4.82	1471.
300	4.22	33.92	298	26.93	116.3	5.07	6.49	1471.



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REFERENCE NO. 76- 5- 40

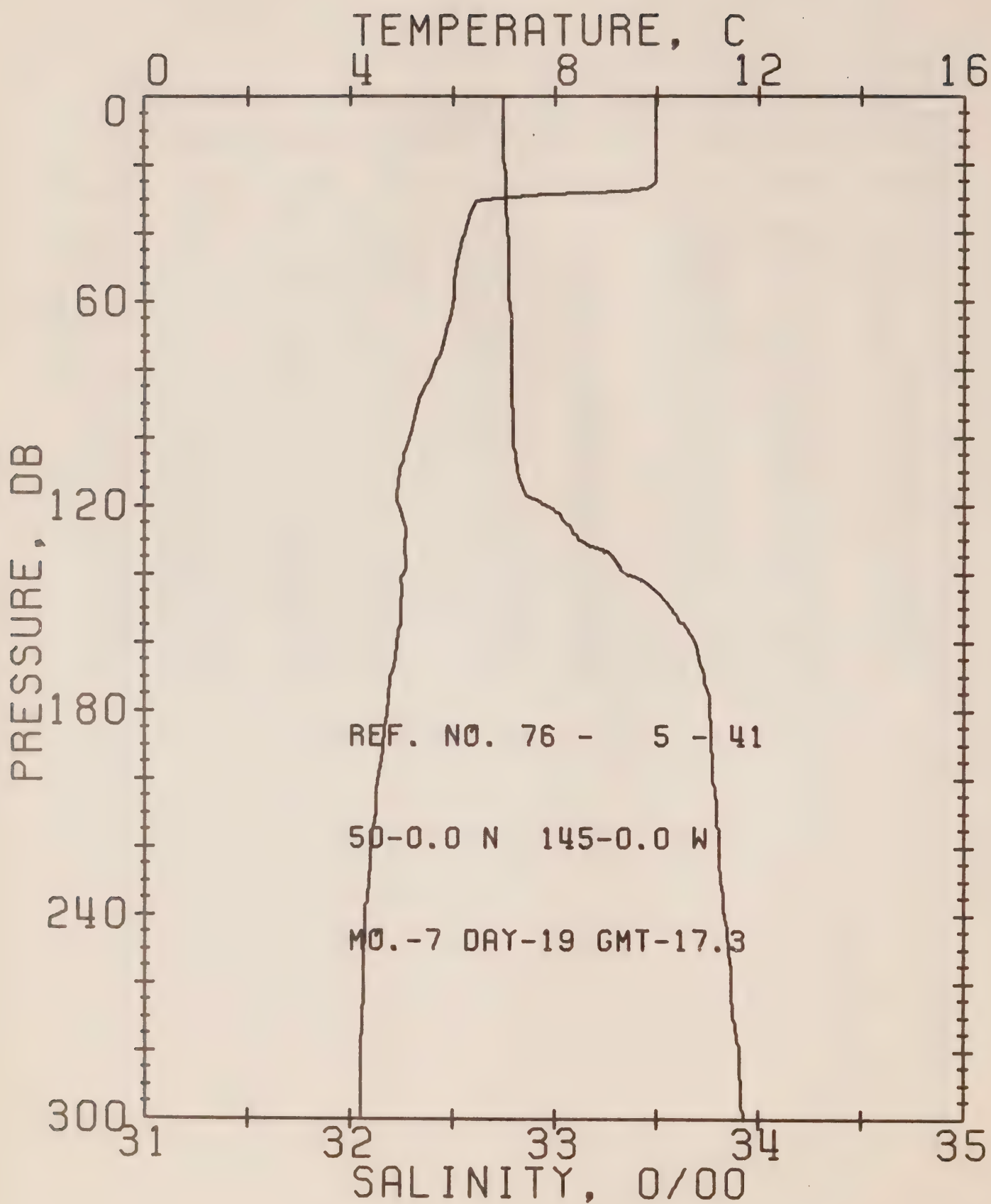
DATE 17/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 214 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.94	32.73	0	25.22	276.3	0.0	0.0	1487.
10	9.92	32.73	10	25.22	276.3	0.28	0.01	1487.
20	9.91	32.74	20	25.23	275.3	0.55	0.06	1487.
30	6.27	32.79	30	25.80	221.3	0.79	0.12	1474.
50	5.94	32.80	50	25.85	216.8	1.23	0.30	1473.
75	5.40	32.81	75	25.92	210.2	1.77	0.64	1471.
100	4.92	32.84	99	26.00	203.1	2.28	1.10	1469.
125	5.06	33.41	124	26.43	162.0	2.75	1.62	1471.
150	4.81	33.74	149	26.72	134.7	3.11	2.13	1471.
175	4.63	33.78	174	26.77	130.0	3.44	2.68	1471.
200	4.46	33.80	199	26.81	126.8	3.76	3.29	1470.
225	4.34	33.82	223	26.84	124.2	4.07	3.97	1470.
250	4.24	33.86	248	26.88	120.6	4.38	4.71	1470.
300	4.17	33.93	298	26.94	115.0	4.97	6.36	1471.
400	3.98	34.04	397	27.05	105.9	6.07	10.28	1472.
500	3.76	34.12	496	27.14	98.1	7.09	14.96	1473.
600	3.57	34.20	595	27.22	91.2	8.04	20.26	1474.
800	3.18	34.32	793	27.35	79.2	9.74	32.33	1476.
1000	2.88	34.39	990	27.43	72.0	11.25	46.15	1478.
1200	2.63	34.45	1188	27.50	66.1	12.62	61.57	1480.



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REFERENCE NO. 76- 5- 41

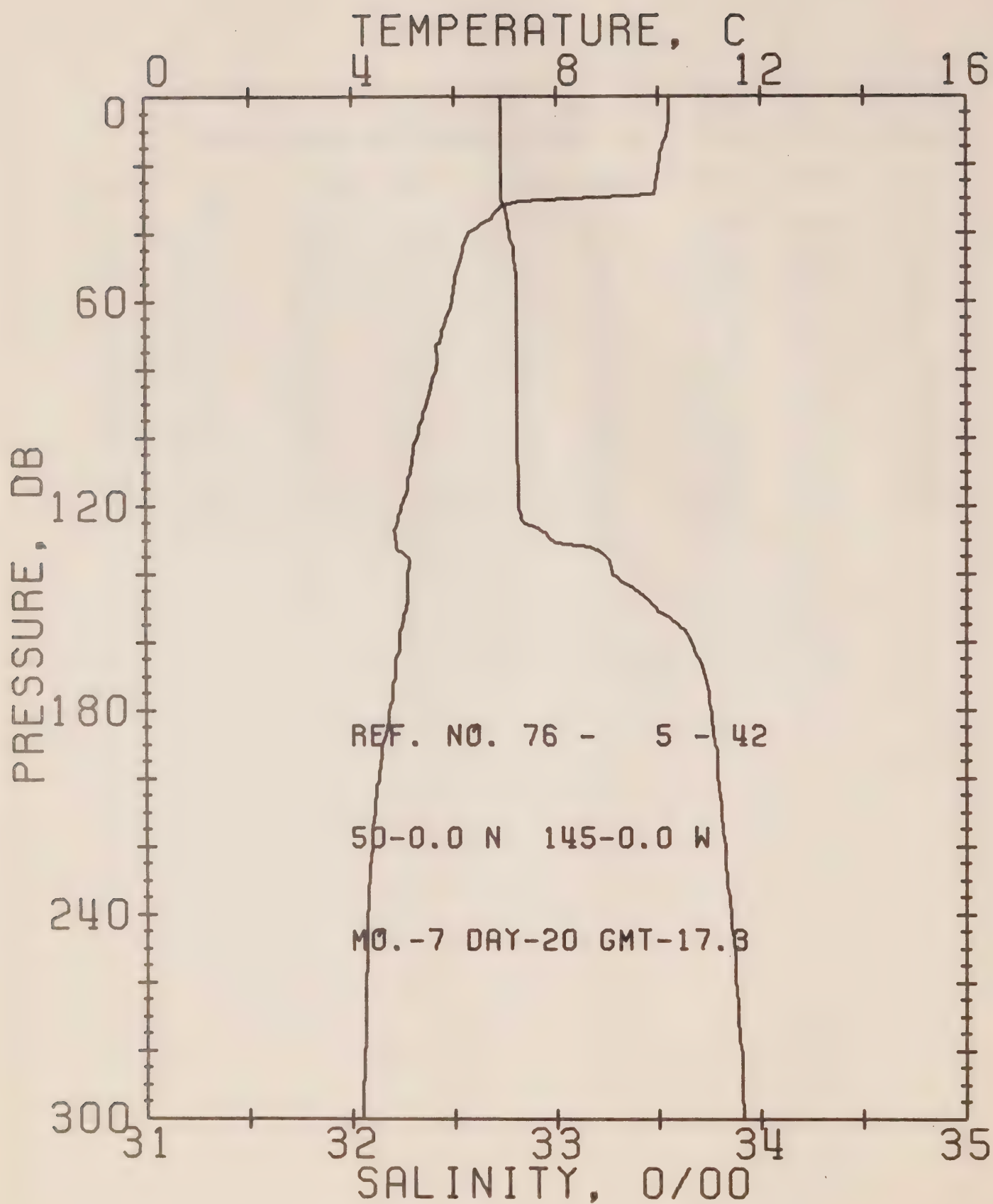
DATE 19/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 134 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.98	32.74	0	25.22	276.1	0.0	0.0	1487.
10	9.98	32.74	10	25.22	276.5	0.28	0.01	1488.
20	9.98	32.74	20	25.22	276.5	0.55	0.06	1488.
30	6.86	32.75	30	25.69	231.5	0.82	0.12	1476.
50	6.03	32.77	50	25.81	220.1	1.27	0.31	1473.
75	5.73	32.78	75	25.86	216.1	1.82	0.65	1472.
100	5.13	32.79	99	25.94	208.9	2.35	1.13	1470.
125	5.03	33.05	124	26.15	188.6	2.85	1.70	1471.
150	4.96	33.56	149	26.56	149.8	3.28	2.30	1471.
175	4.72	33.74	174	26.74	133.6	3.63	2.88	1471.
200	4.52	33.77	199	26.78	129.8	3.96	3.51	1471.
225	4.36	33.80	223	26.82	125.9	4.27	4.20	1470.
250	4.25	33.85	248	26.87	121.4	4.58	4.95	1470.
300	4.18	33.92	298	26.93	115.8	5.18	6.61	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 42

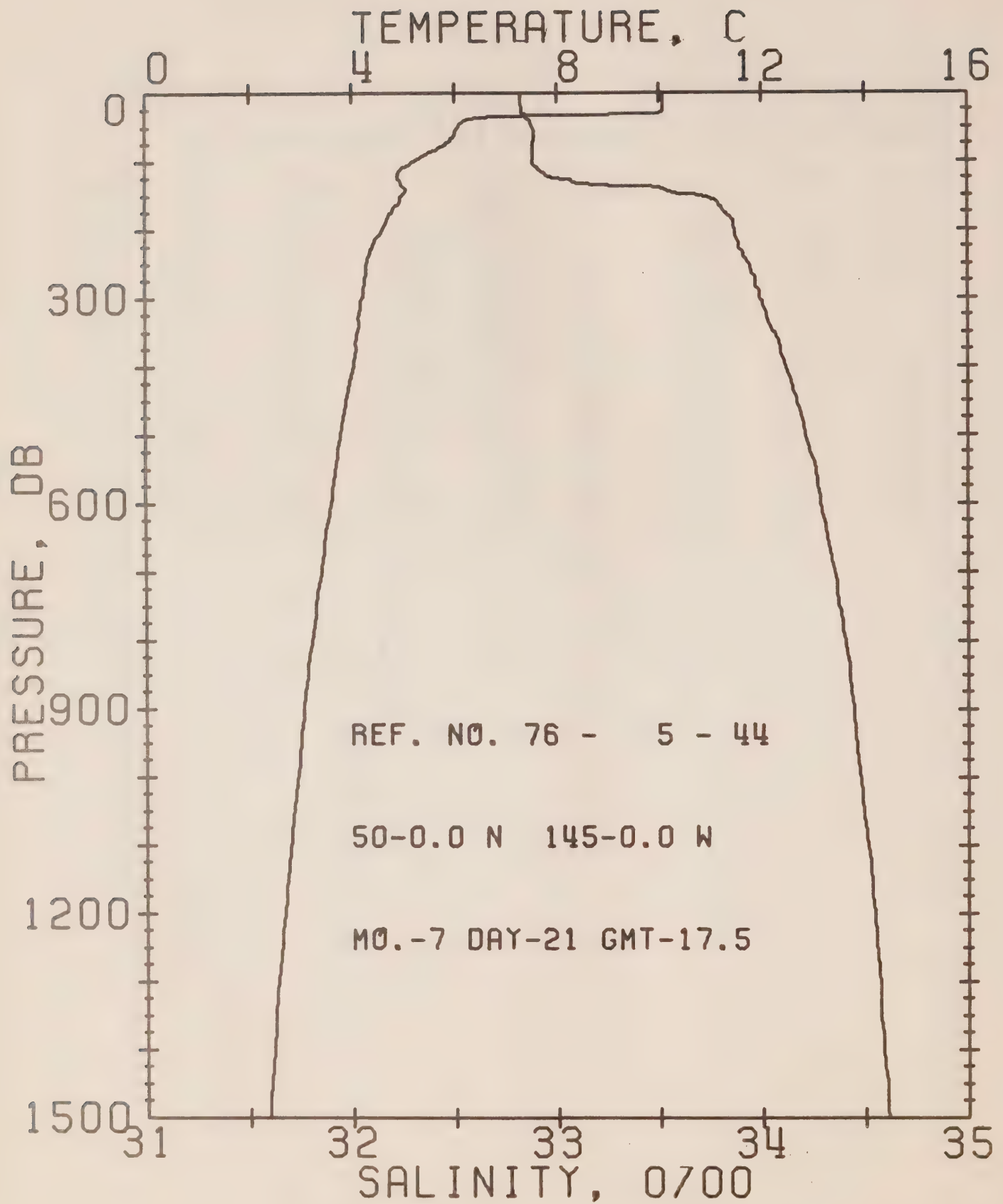
DATE 20/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 135 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	10.22	32.73	0	25.17	280.7	0.0	0.0	1488.
10	10.18	32.73	10	25.18	280.5	0.28	0.01	1488.
20	10.00	32.73	20	25.20	277.8	0.56	0.06	1488.
30	8.23	32.73	30	25.48	251.4	0.84	0.13	1481.
50	6.06	32.79	50	25.83	218.8	1.29	0.31	1473.
75	5.64	32.80	75	25.88	213.6	1.83	0.65	1472.
100	5.24	32.80	99	25.93	209.4	2.36	1.13	1471.
125	4.85	32.84	124	26.01	202.4	2.87	1.72	1470.
150	5.03	33.48	149	26.49	156.6	3.31	2.33	1472.
175	4.77	33.74	174	26.73	134.5	3.67	2.92	1471.
200	4.50	33.78	199	26.79	128.8	4.00	3.55	1471.
225	4.33	33.82	223	26.84	124.3	4.31	4.23	1470.
250	4.26	33.86	248	26.88	120.4	4.62	4.97	1471.
300	4.18	33.91	298	26.93	116.6	5.21	6.63	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 44

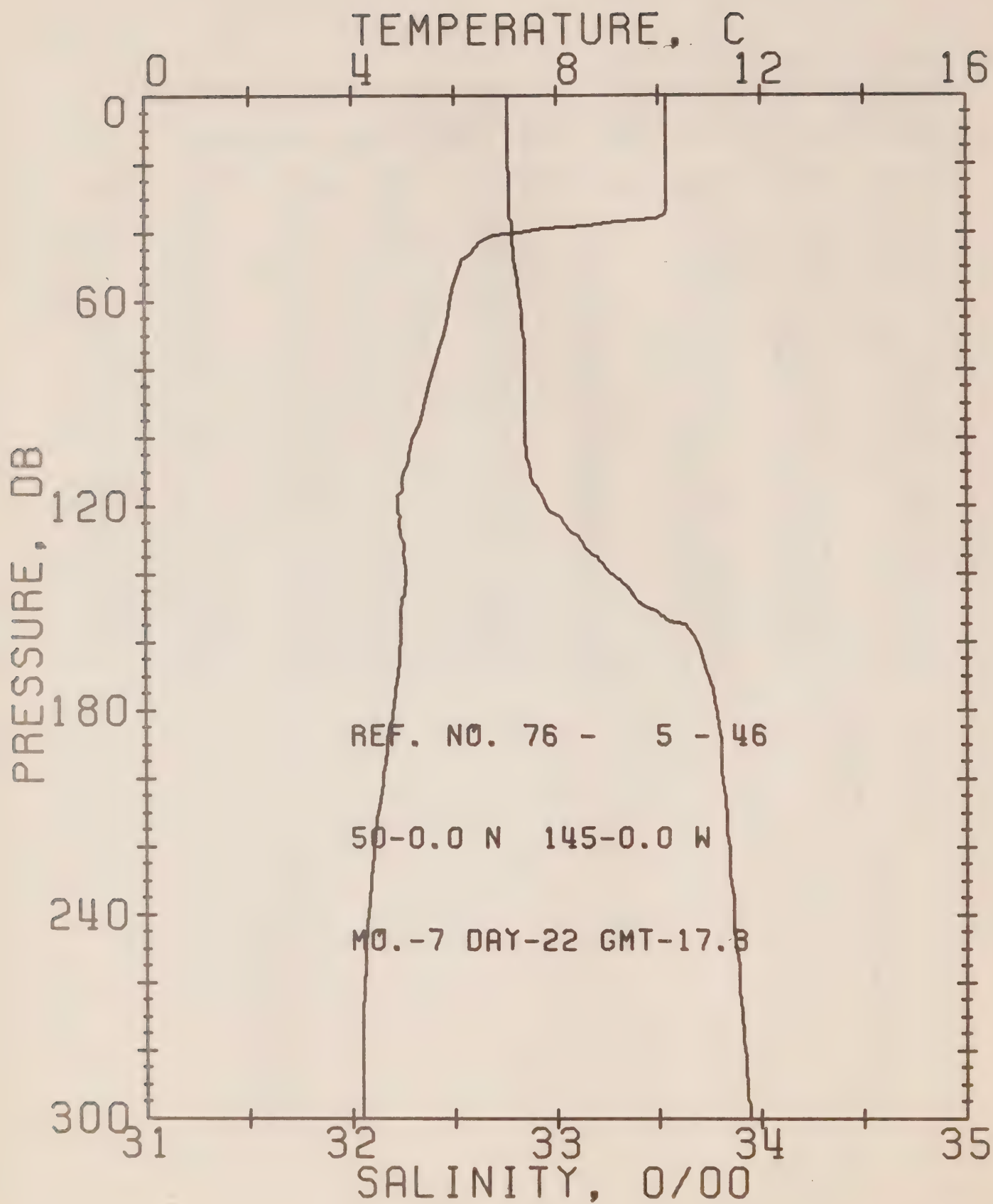
DATE 21/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 224 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.07	32.82	0	25.26	271.7	0.0	0.0	1488.
10	10.07	32.82	10	25.26	272.2	0.27	0.01	1488.
20	10.08	32.83	20	25.27	272.0	0.54	0.06	1488.
30	10.01	32.83	30	25.28	270.7	0.82	0.12	1488.
50	6.04	32.88	50	25.90	212.0	1.26	0.30	1473.
75	5.82	32.88	75	25.93	209.7	1.79	0.64	1473.
100	5.20	32.88	99	26.00	202.9	2.30	1.10	1471.
125	4.88	33.04	124	26.16	187.6	2.80	1.67	1470.
150	4.95	33.70	149	26.68	139.2	3.21	2.24	1472.
175	4.75	33.82	174	26.79	128.3	3.54	2.79	1471.
200	4.58	33.86	199	26.85	123.3	3.86	3.39	1471.
225	4.38	33.89	223	26.89	119.5	4.16	4.05	1471.
250	4.27	33.93	248	26.94	115.3	4.45	4.76	1471.
300	4.20	33.99	298	26.99	110.8	5.02	6.34	1471.
400	4.01	34.11	397	27.11	100.4	6.07	10.09	1472.
500	3.76	34.21	496	27.21	91.5	7.03	14.46	1473.
600	3.57	34.28	595	27.28	84.8	7.90	19.37	1474.
800	3.19	34.40	793	27.41	73.6	9.48	30.58	1476.
1000	2.92	34.47	990	27.50	66.4	10.87	43.35	1478.
1200	2.66	34.54	1188	27.57	59.8	12.13	57.46	1480.



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REFERENCE NO. 76- 5- 46

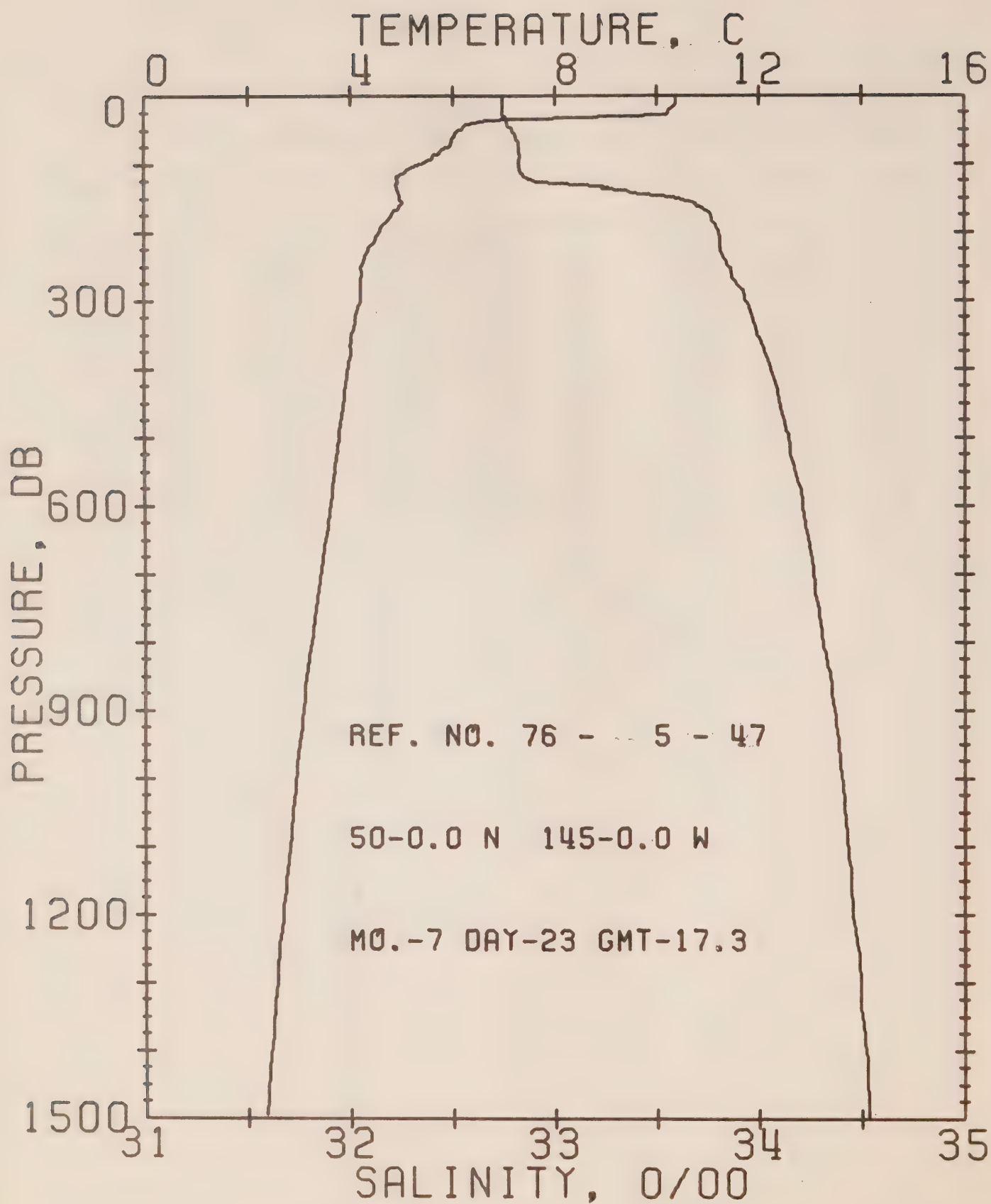
DATE 22/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 123 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	10.17	32.76	0	25.20	277.6	0.0	0.0	1488.
10	10.16	32.76	10	25.20	278.0	0.28	0.01	1488.
20	10.16	32.76	20	25.20	278.0	0.56	0.06	1488.
30	10.16	32.77	30	25.21	277.5	0.83	0.13	1489.
50	8.09	32.80	50	25.83	218.9	1.32	0.32	1473.
75	5.68	32.84	75	25.91	211.0	1.86	0.67	1472.
100	5.18	32.84	99	25.97	205.7	2.38	1.13	1471.
125	4.91	33.03	124	26.15	188.7	2.88	1.70	1470.
150	4.94	33.44	149	26.47	158.5	3.32	2.31	1471.
175	4.81	33.76	174	26.74	133.3	3.67	2.90	1471.
200	4.58	33.81	199	26.80	127.7	4.00	3.52	1471.
225	4.37	33.84	223	26.85	123.2	4.31	4.20	1471.
250	4.24	33.87	248	26.89	119.5	4.61	4.93	1470.
300	4.18	33.94	298	26.95	114.4	5.20	6.56	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 47

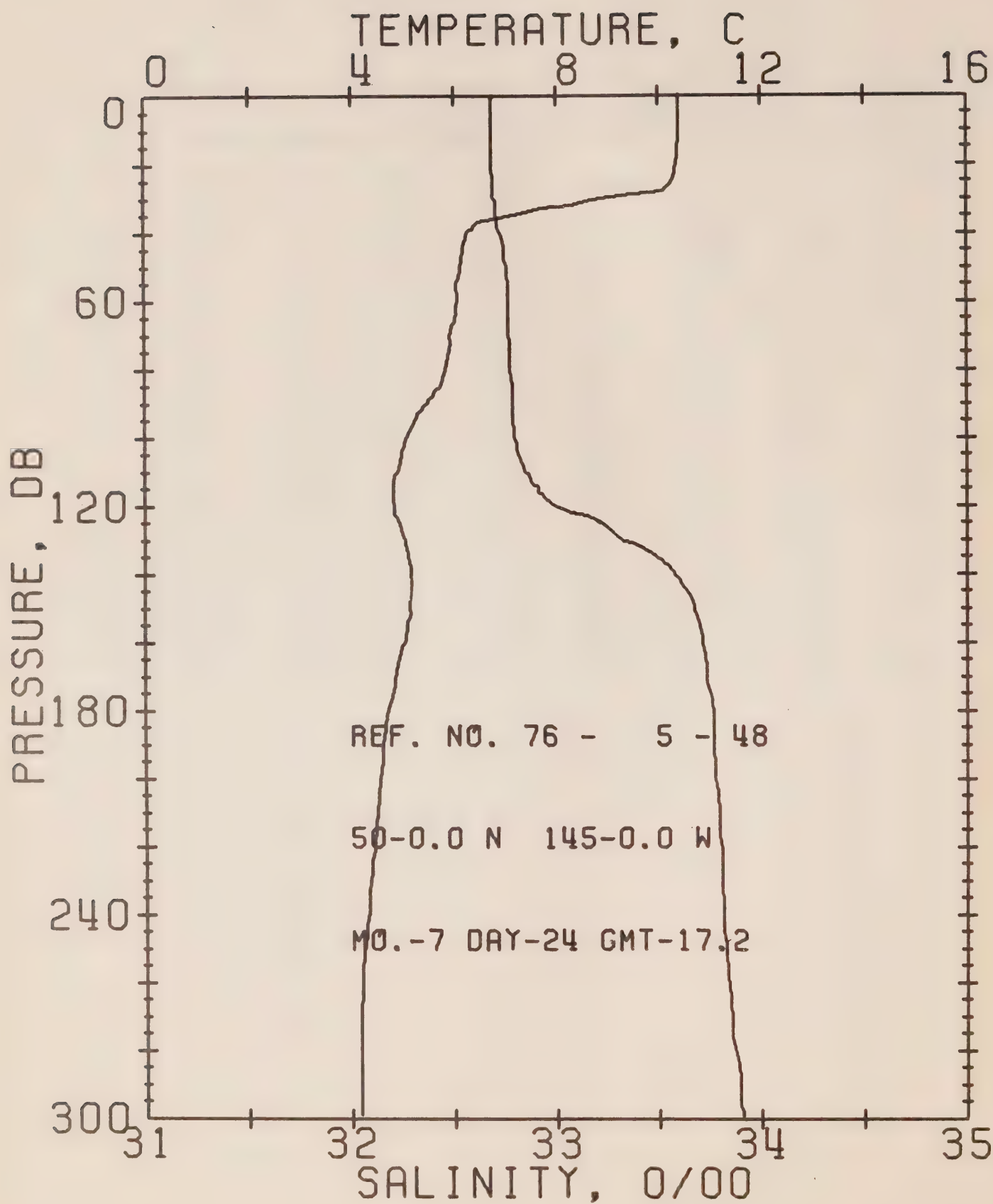
DATE 23/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STD CAST 216 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	10.37	32.74	0	25.15	282.4	0.0	0.0	1489.
10	10.36	32.74	10	25.15	282.6	0.28	0.01	1489.
20	10.26	32.74	20	25.17	281.2	0.50	0.06	1489.
30	9.44	32.74	30	25.30	268.5	0.84	0.13	1486.
50	6.16	32.79	50	25.81	220.1	1.31	0.32	1474.
75	5.89	32.82	75	25.87	215.0	1.85	0.66	1473.
100	5.39	32.82	99	25.93	209.5	2.38	1.13	1471.
125	4.90	32.91	124	26.06	197.7	2.89	1.72	1470.
150	4.94	33.59	149	26.59	147.3	3.32	2.31	1471.
175	4.78	33.76	174	26.74	133.3	3.67	2.89	1471.
200	4.54	33.80	199	26.80	127.7	3.99	3.51	1471.
225	4.34	33.81	223	26.83	125.1	4.31	4.20	1470.
250	4.19	33.85	248	26.88	120.8	4.62	4.94	1470.
300	4.19	33.93	298	26.94	115.2	5.21	6.59	1471.
400	3.94	34.05	397	27.06	104.3	6.30	10.48	1472.
500	3.75	34.14	496	27.15	96.4	7.30	15.07	1473.
600	3.59	34.21	595	27.22	90.4	8.24	20.31	1474.
800	3.22	34.31	793	27.34	80.7	9.95	32.47	1476.
1000	2.92	34.40	990	27.44	72.1	11.46	46.35	1478.
1200	2.66	34.45	1186	27.50	66.5	12.84	61.83	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 48

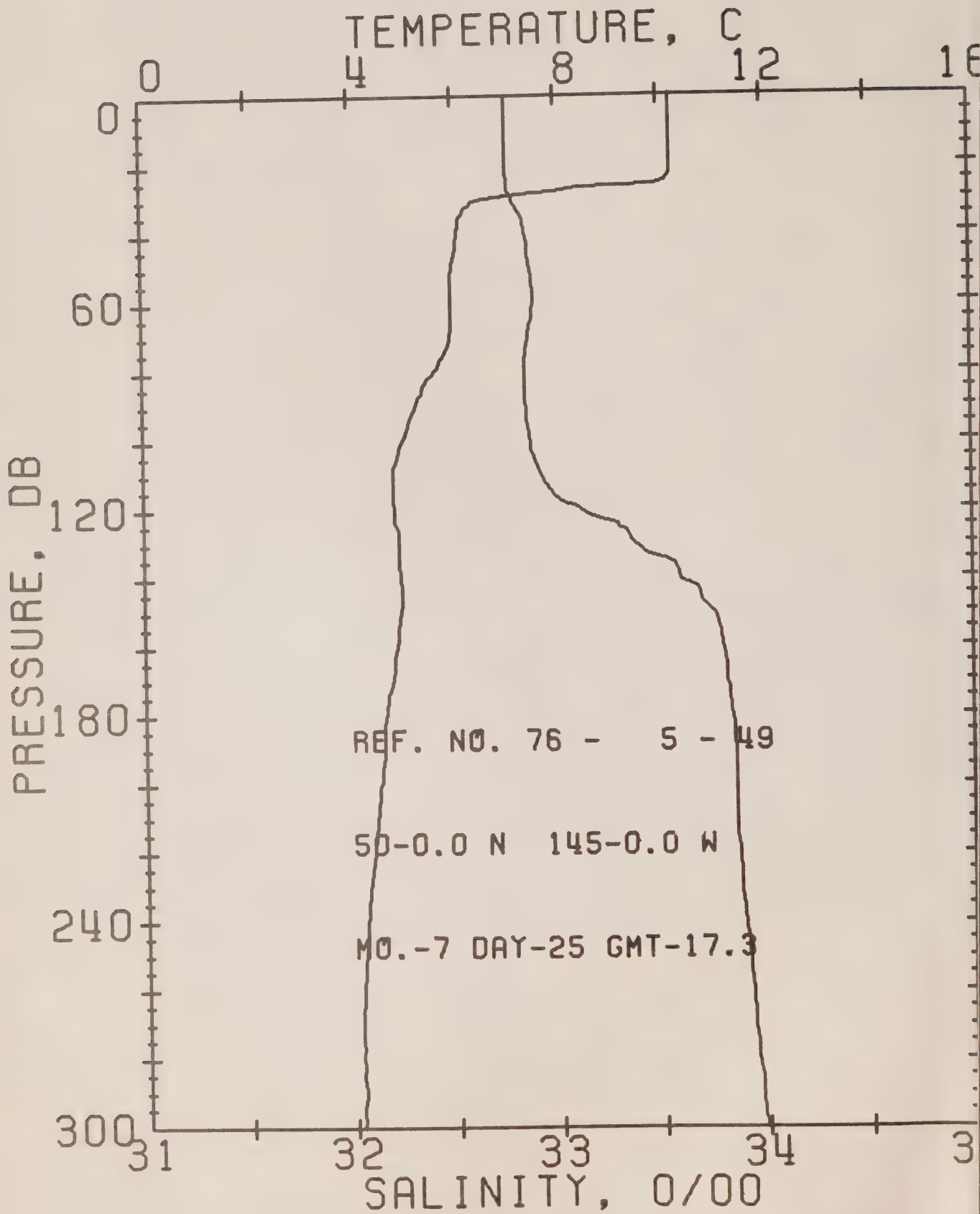
DATE 24/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 143 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.40	32.68	0	25.10	287.4	0.0	0.0	1489.
10	10.40	32.68	10	25.10	287.8	0.29	0.01	1489.
20	10.34	32.68	20	25.11	287.0	0.58	0.06	1489.
30	8.86	32.69	30	25.36	263.5	0.86	0.13	1484.
50	6.10	32.75	50	25.79	222.5	1.32	0.32	1473.
75	5.88	32.77	75	25.83	218.7	1.87	0.67	1473.
100	5.04	32.79	99	25.95	207.9	2.41	1.15	1470.
125	4.94	33.21	124	26.29	175.6	2.90	1.71	1470.
150	5.13	33.67	149	26.63	143.5	3.29	2.26	1472.
175	4.78	33.74	174	26.73	134.5	3.64	2.83	1471.
200	4.54	33.77	199	26.78	130.0	3.97	3.46	1471.
225	4.38	33.80	223	26.82	126.3	4.29	4.15	1471.
250	4.22	33.82	248	26.85	123.3	4.60	4.91	1470.



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REFERENCE NO. 76- 5- 49

DATE 25/ 7/76

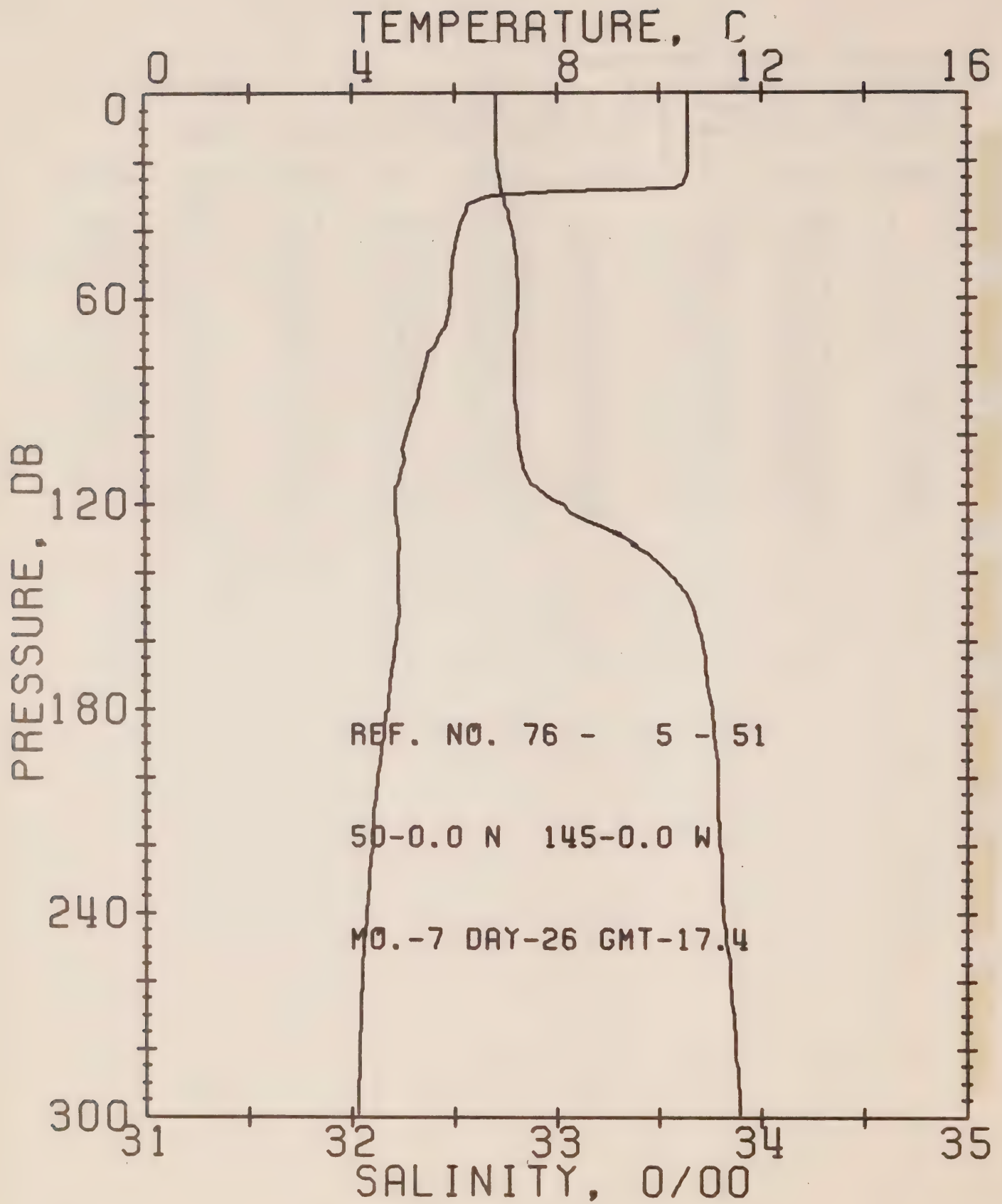
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST 127 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.25	32.76	0	25.19	279.0	0.0	0.0	1488.
10	10.25	32.76	10	25.19	279.4	0.28	0.01	1489.
20	10.24	32.76	20	25.19	279.4	0.56	0.06	1489.
30	6.61	32.79	30	25.76	225.4	0.82	0.12	1475.
50	5.97	32.87	50	25.90	211.8	1.25	0.30	1473.
75	5.80	32.85	75	25.90	211.9	1.78	0.64	1473.
100	4.98	32.86	99	26.01	201.6	2.30	1.10	1470.
125	4.87	33.29	124	26.36	168.8	2.78	1.64	1470.
150	4.93	33.74	149	26.71	136.0	3.16	2.17	1471.
175	4.66	33.82	174	26.80	127.2	3.48	2.71	1471.
200	4.51	33.85	199	26.84	123.7	3.80	3.31	1471.
225	4.32	33.87	223	26.88	120.4	4.10	3.97	1470.
250	4.18	33.90	248	26.92	116.7	4.40	4.69	1470.
300	4.10	33.98	298	26.99	110.5	4.97	6.28	1471.



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REFERENCE NO. 76- 5- 51

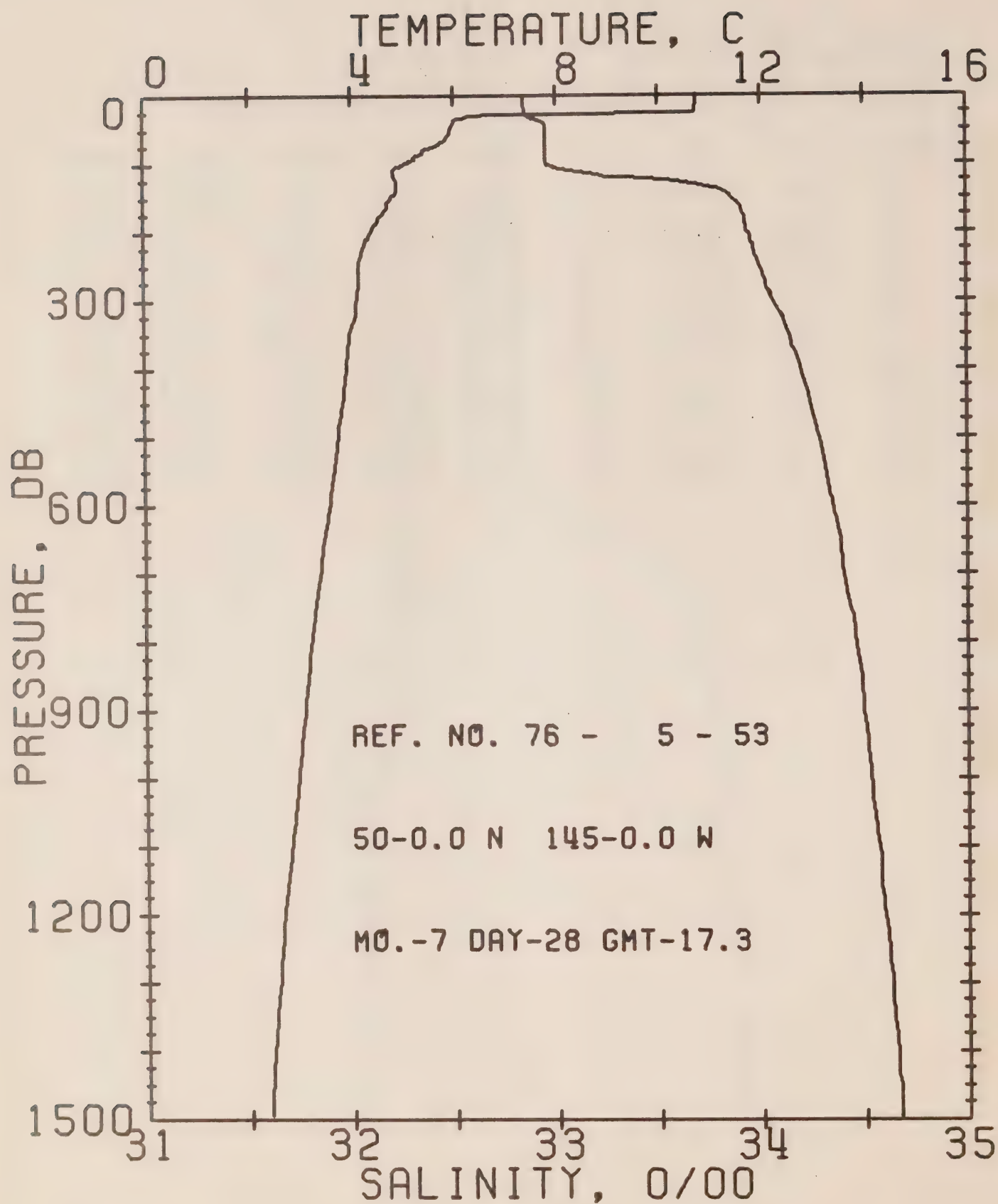
DATE 26/ 7/76

STATION 1P

POSITION 50- 0.0N, 145- 0.0W GMT 17.4

RESULTS OF STP CAST 122 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	10.56	32.70	0	25.09	288.4	0.0	0.0	1489.
10	10.56	32.70	10	25.09	288.8	0.29	0.01	1490.
20	10.55	32.71	20	25.09	288.4	0.58	0.06	1490.
30	6.76	32.73	30	25.69	231.8	0.86	0.13	1476.
50	5.94	32.80	50	25.85	216.8	1.30	0.31	1473.
75	5.52	32.79	75	25.89	213.1	1.84	0.65	1471.
100	5.03	32.80	99	25.96	206.7	2.36	1.12	1470.
125	4.86	33.15	124	26.25	179.2	2.86	1.69	1470.
150	4.90	33.65	149	26.64	142.2	3.25	2.24	1471.
175	4.70	33.73	174	26.73	134.2	3.60	2.80	1471.
200	4.48	33.78	199	26.79	128.6	3.92	3.43	1470.
225	4.34	33.80	223	26.82	125.9	4.24	4.12	1470.
250	4.21	33.83	248	26.86	122.8	4.55	4.88	1470.



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REFERENCE NO. 76- 5- 53

DATE 28/ 7/76

STATION P

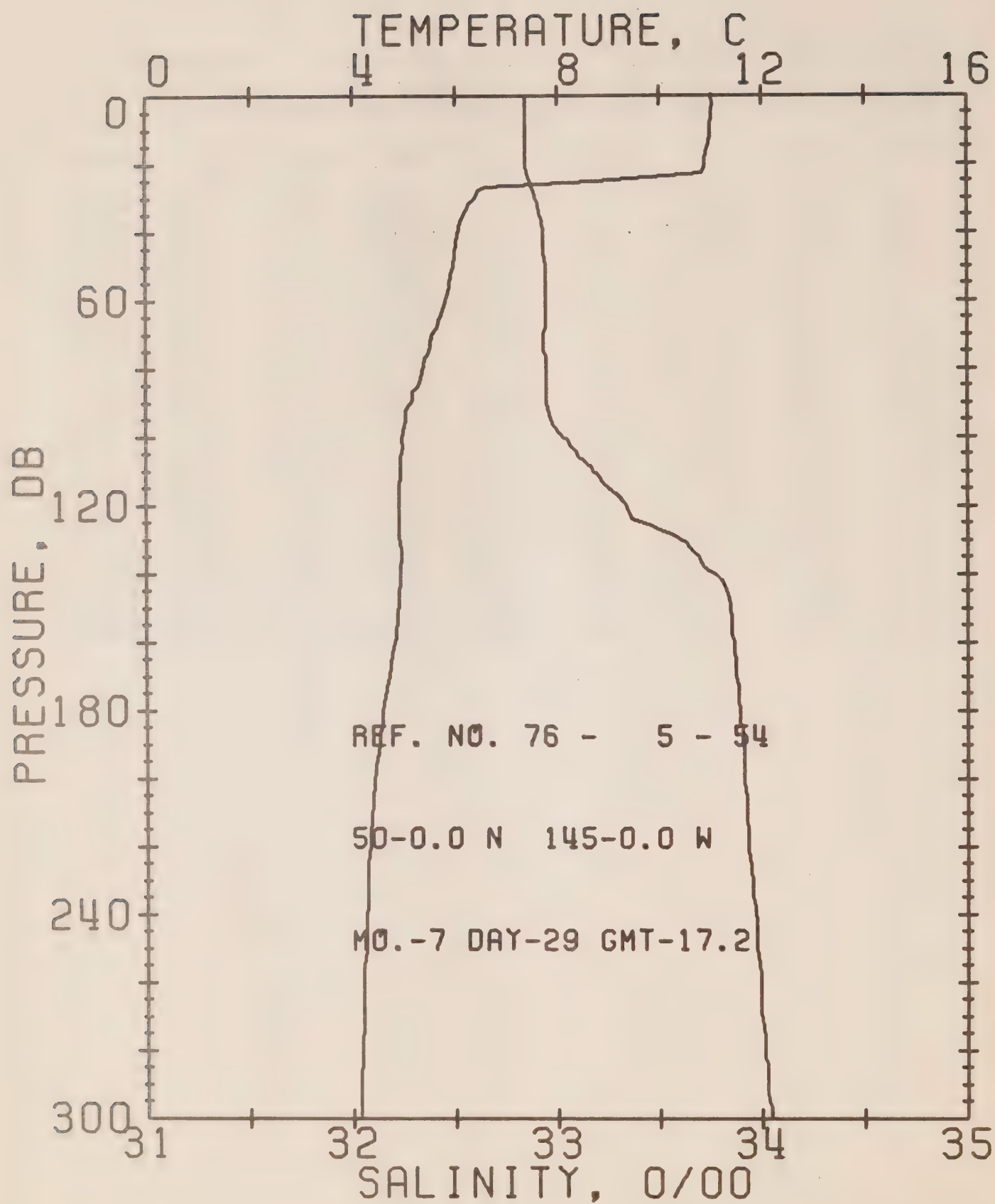
POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST

200 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.75	32.84	0	25.16	281.2	0.0	0.0	1490.
10	10.74	32.84	10	25.16	281.5	0.28	0.01	1490.
20	10.73	32.84	20	25.17	281.3	0.56	0.06	1491.
30	6.29	32.86	30	25.85	216.3	0.83	0.12	1474.
50	5.94	32.95	50	25.97	205.5	1.25	0.29	1473.
75	5.63	32.95	75	26.00	202.2	1.76	0.62	1472.
100	5.05	32.95	99	26.07	195.9	2.26	1.06	1470.
125	4.87	33.56	124	26.57	148.6	2.70	1.58	1471.
150	4.76	33.85	149	26.82	125.6	3.04	2.04	1471.
175	4.58	33.91	174	26.88	119.6	3.35	2.55	1471.
200	4.38	33.93	199	26.92	116.3	3.64	3.11	1470.
225	4.21	33.96	223	26.96	112.6	3.92	3.73	1470.
250	4.13	33.99	248	26.99	109.7	4.20	4.40	1470.
300	4.10	34.07	298	27.07	103.4	4.74	5.90	1471.
400	3.89	34.19	397	27.18	93.4	5.72	9.40	1472.
500	3.72	34.28	496	27.27	85.9	6.62	13.51	1473.
600	3.56	34.34	595	27.33	80.1	7.45	18.16	1474.
800	3.18	34.45	793	27.46	69.3	8.94	28.76	1476.
1000	2.93	34.52	990	27.54	62.7	10.26	40.82	1478.
1200	2.64	34.59	1188	27.61	56.2	11.44	54.11	1480.



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REFERENCE NO. 76- 5- 54

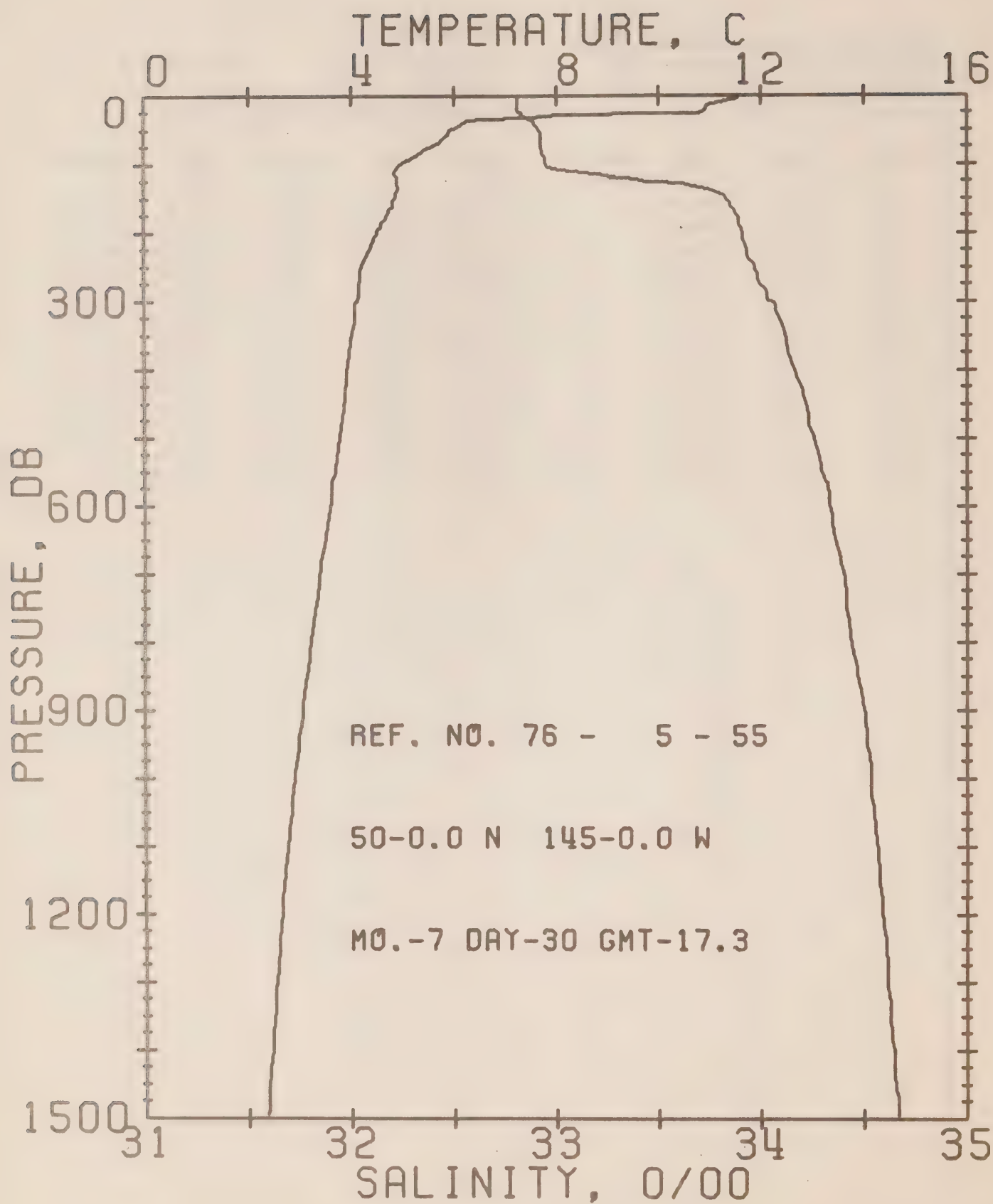
DATE 29/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 133 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.02	32.84	0	25.12	285.7	0.0	0.0	1491.
10	10.98	32.84	10	25.12	285.6	0.29	0.01	1491.
20	10.88	32.84	20	25.14	284.0	0.57	0.06	1491.
30	6.38	32.89	30	25.86	215.1	0.82	0.12	1474.
50	5.94	32.94	50	25.96	206.3	1.24	0.29	1473.
75	5.47	32.93	75	26.01	201.9	1.75	0.62	1471.
100	4.94	33.02	99	26.14	189.6	2.24	1.06	1470.
125	4.89	33.42	124	26.46	159.3	2.68	1.56	1470.
150	4.86	33.84	149	26.80	127.8	3.03	2.04	1471.
175	4.62	33.86	174	26.86	122.3	3.34	2.56	1471.
200	4.40	33.91	199	26.90	118.1	3.64	3.13	1470.
225	4.28	33.94	223	26.94	115.0	3.93	3.76	1470.
250	4.23	33.97	248	26.97	112.2	4.21	4.45	1471.



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REFERENCE NO. 76- 5- 55

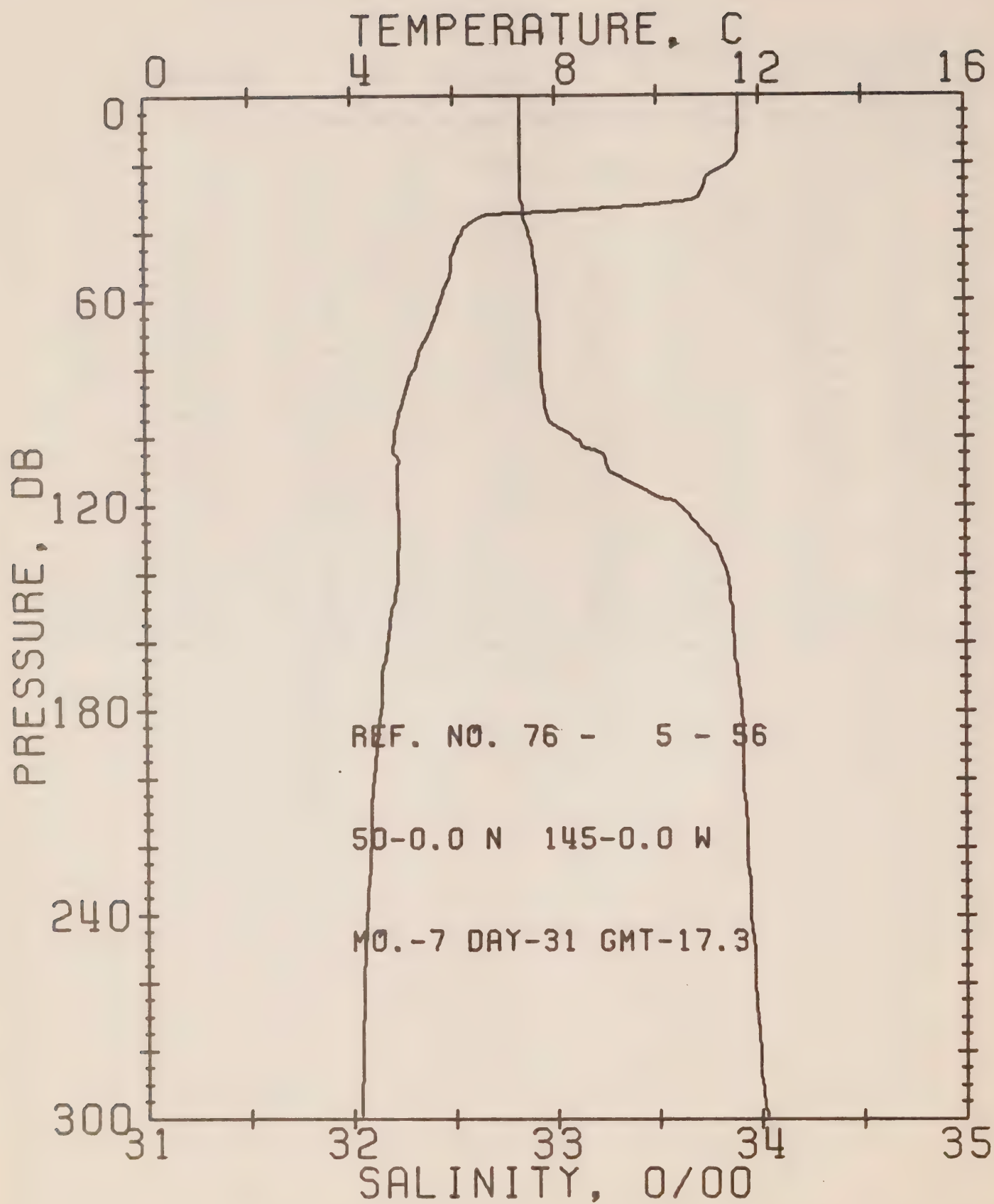
DATE 30/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 202 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.54	32.81	0	25.00	296.9	0.0	0.0	1493.
10	11.19	32.81	10	25.06	291.2	0.30	0.02	1492.
20	10.90	32.81	20	25.11	286.6	0.58	0.06	1491.
30	7.76	32.84	30	25.64	236.7	0.86	0.13	1480.
50	5.89	32.91	50	25.94	208.0	1.29	0.30	1473.
75	5.54	32.92	75	25.99	203.5	1.80	0.63	1472.
100	4.96	32.94	99	26.07	195.7	2.30	1.08	1470.
125	4.89	33.44	124	26.48	157.8	2.75	1.59	1471.
150	4.84	33.83	149	26.79	128.5	3.10	2.07	1471.
175	4.66	33.88	174	26.85	122.8	3.41	2.59	1471.
200	4.48	33.90	199	26.89	119.3	3.71	3.17	1471.
225	4.33	33.93	223	26.92	116.2	4.01	3.81	1470.
250	4.19	33.96	248	26.97	112.2	4.29	4.50	1470.
300	4.10	34.04	298	27.04	106.1	4.84	6.03	1471.
400	3.91	34.16	397	27.15	96.1	5.84	9.60	1472.
500	3.75	34.25	496	27.24	88.4	6.76	13.81	1473.
600	3.58	34.33	595	27.32	81.3	7.61	18.53	1474.
800	3.20	34.43	793	27.44	71.1	9.12	29.32	1476.
1000	2.87	34.53	990	27.55	61.6	10.44	41.37	1478.
1200	2.63	34.58	1188	27.61	56.2	11.62	54.58	1480.



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REFERENCE NO. 76- 5- 56

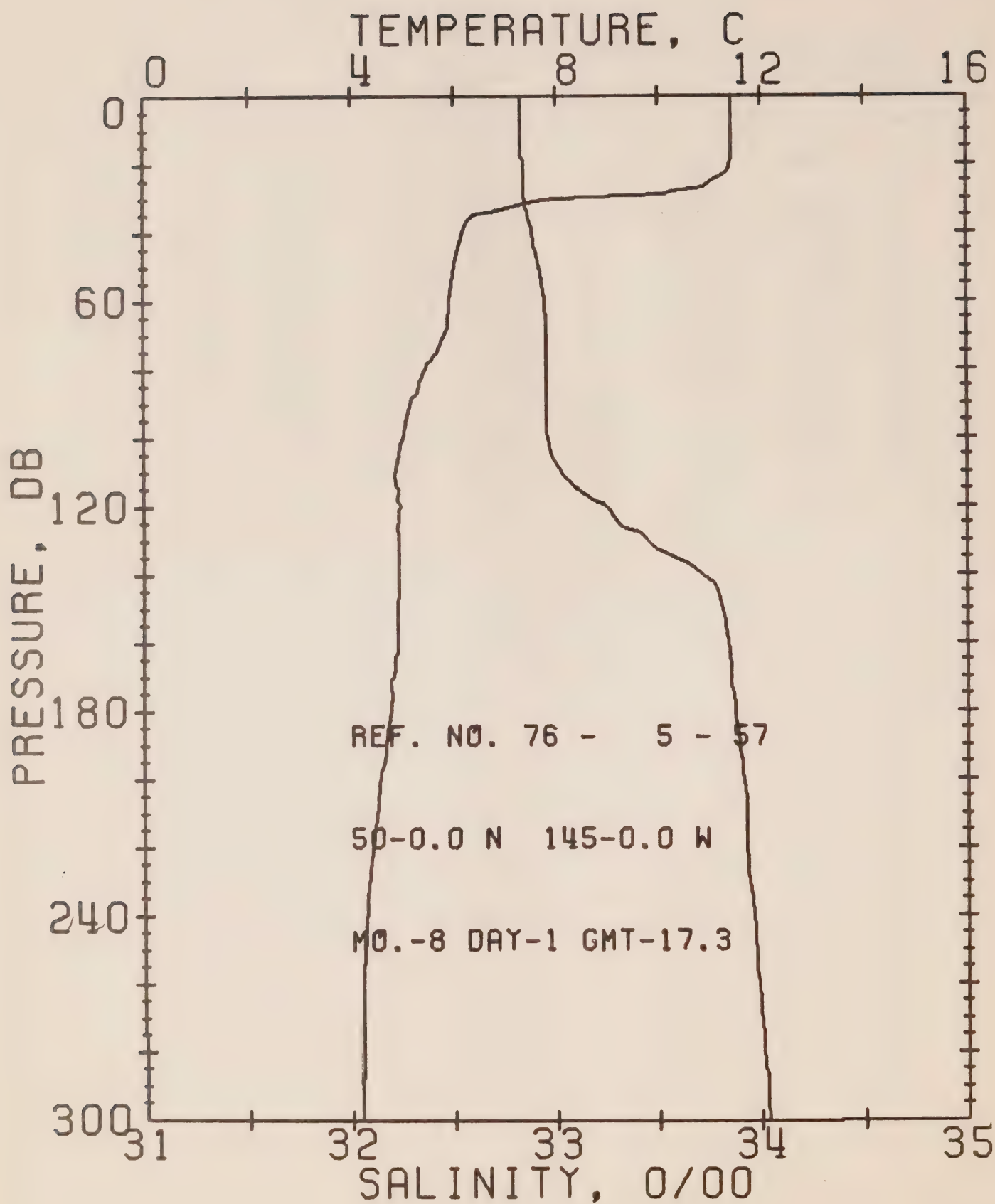
DATE 31/ 7/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 114 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA L	POT. EN	SOUND
0	11.59	32.83	0	25.00	296.2	0.0	0.0	1493.
10	11.59	32.83	10	25.00	296.7	0.30	0.02	1493.
20	11.42	32.83	20	25.04	294.0	0.59	0.06	1493.
30	10.79	32.83	30	25.15	283.5	0.88	0.13	1491.
50	5.95	32.90	50	25.92	209.6	1.33	0.31	1473.
75	5.32	32.92	75	26.02	201.0	1.84	0.64	1471.
100	4.82	33.08	99	26.20	183.8	2.33	1.08	1469.
125	4.91	33.87	124	26.66	140.4	2.74	1.54	1471.
150	4.74	33.86	149	26.83	124.9	3.06	2.00	1471.
175	4.56	33.89	174	26.87	120.7	3.37	2.51	1471.
200	4.40	33.91	199	26.90	118.0	3.67	3.08	1470.
225	4.32	33.93	223	26.93	115.9	3.96	3.71	1470.
250	4.22	33.96	248	26.96	112.8	4.25	4.40	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 57

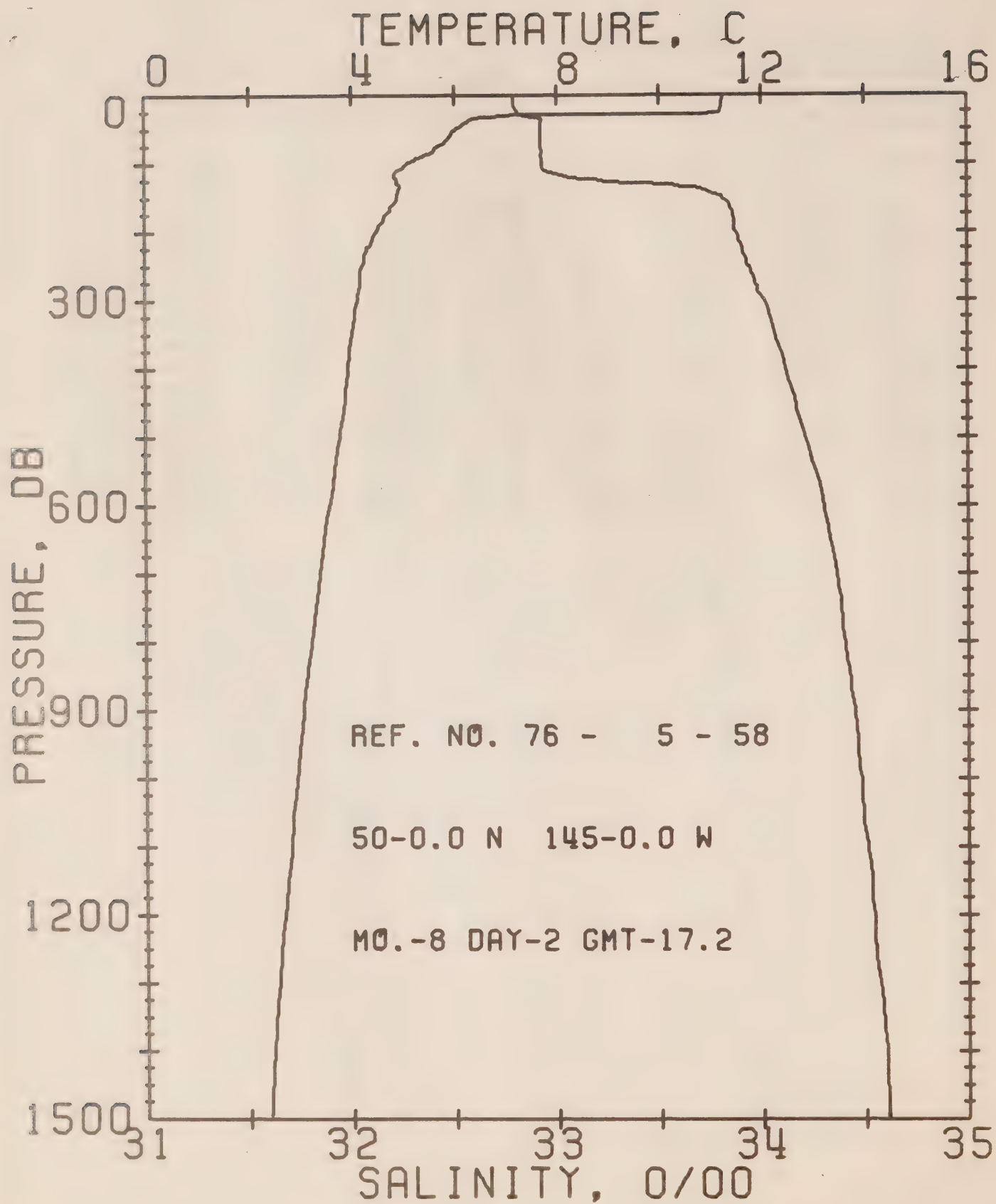
DATE 1/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 113 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.45	32.83	0	25.03	293.8	0.0	0.0	1493.
10	11.44	32.83	10	25.03	294.1	0.29	0.01	1493.
20	11.40	32.84	20	25.05	292.8	0.59	0.06	1493.
30	8.01	32.84	30	25.60	240.1	0.87	0.13	1481.
50	5.98	32.91	50	25.93	208.8	1.30	0.31	1473.
75	5.65	32.95	75	26.00	202.5	1.82	0.63	1472.
100	4.98	32.95	99	26.08	195.0	2.31	1.08	1470.
125	4.90	33.28	124	26.35	169.5	2.77	1.60	1470.
150	4.89	33.80	149	26.77	130.7	3.14	2.11	1471.
175	4.77	33.86	174	26.82	125.5	3.46	2.64	1471.
200	4.53	33.90	199	26.89	119.8	3.76	3.23	1471.
225	4.34	33.93	223	26.92	116.3	4.06	3.86	1471.
250	4.22	33.97	248	26.97	112.3	4.34	4.55	1470.
300	4.17	34.03	298	27.02	107.5	4.89	6.09	1471.



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REFERENCE NO. 76- 5- 58

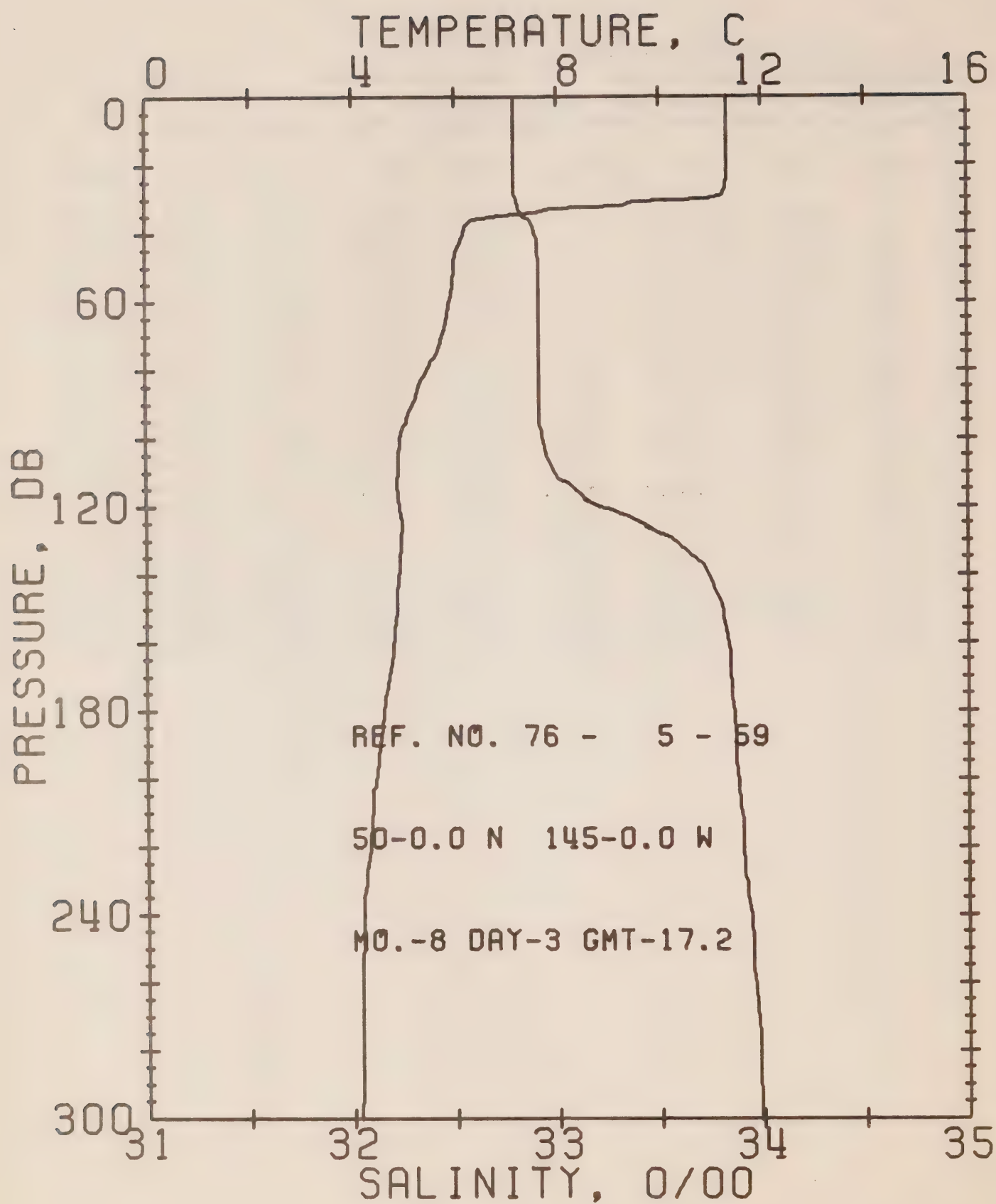
DATE 2/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 204 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.24	32.79	0	25.04	293.2	0.0	0.0	1492.
10	11.22	32.79	10	25.04	293.2	0.29	0.01	1492.
20	11.21	32.80	20	25.05	292.9	0.59	0.06	1492.
30	7.06	32.84	30	25.74	227.4	0.87	0.13	1477.
50	6.05	32.92	50	25.93	209.2	1.29	0.30	1473.
75	5.69	32.92	75	25.97	205.2	1.81	0.63	1472.
100	5.08	32.93	99	26.05	197.9	2.32	1.08	1470.
125	4.89	33.24	124	26.32	172.8	2.79	1.63	1470.
150	4.89	33.81	149	26.77	130.3	3.15	2.13	1471.
175	4.66	33.86	174	26.83	124.3	3.47	2.65	1471.
200	4.47	33.87	199	26.87	121.4	3.77	3.24	1471.
225	4.29	33.91	223	26.91	117.1	4.07	3.89	1470.
250	4.20	33.93	248	26.94	114.5	4.36	4.59	1470.
300	4.10	34.01	298	27.01	108.2	4.92	6.15	1471.
400	3.92	34.12	397	27.12	99.3	5.95	9.83	1472.
500	3.75	34.21	496	27.21	91.1	6.91	14.20	1473.
600	3.55	34.30	595	27.30	83.2	7.78	19.07	1474.
800	3.20	34.40	793	27.41	73.7	9.34	30.15	1476.
1000	2.91	34.48	990	27.50	65.9	10.72	42.85	1478.
1200	2.66	34.54	1188	27.57	59.9	11.98	56.95	1480.



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REFERENCE NO. 76- 5- 59

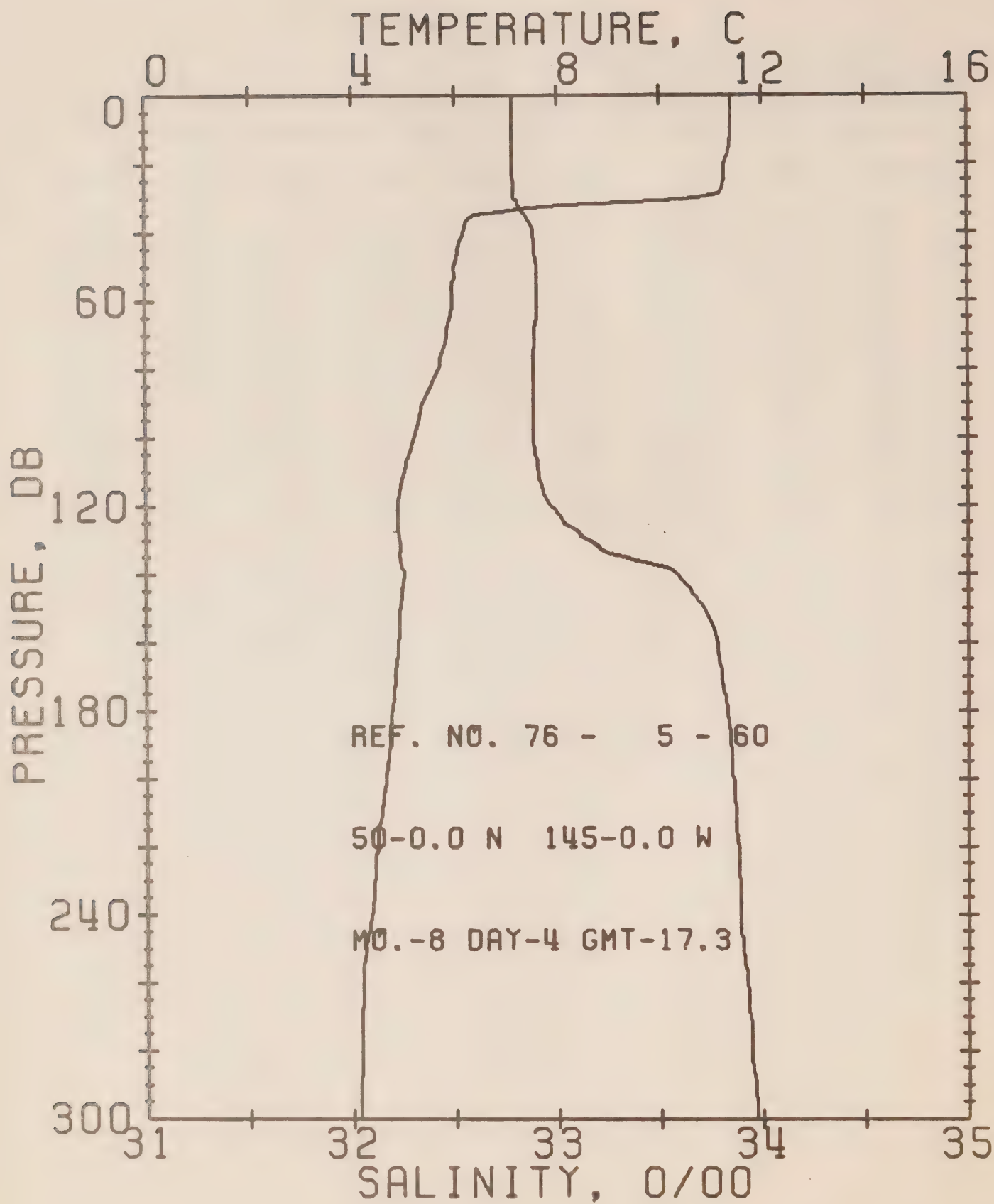
DATE 3/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.2

RESULTS OF STP CAST 123 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	11.32	32.79	0	25.02	294.5	0.0	0.0	1492.
10	11.33	32.79	10	25.02	295.1	0.30	0.02	1493.
20	11.33	32.79	20	25.02	295.3	0.59	0.06	1493.
30	10.96	32.80	30	25.09	288.6	0.89	0.14	1492.
50	5.97	32.91	50	25.93	208.9	1.33	0.31	1473.
75	5.64	32.91	75	25.97	205.4	1.85	0.64	1472.
100	4.92	32.92	99	26.06	196.9	2.35	1.09	1470.
125	4.97	33.43	124	26.46	159.4	2.81	1.62	1471.
150	4.85	33.80	149	26.77	130.3	3.16	2.11	1471.
175	4.63	33.85	174	26.83	124.7	3.48	2.64	1471.
200	4.44	33.88	199	26.87	120.8	3.79	3.22	1470.
225	4.26	33.91	223	26.92	116.7	4.09	3.87	1470.
250	4.18	33.95	248	26.96	113.1	4.37	4.56	1470.
300	4.13	33.99	298	26.99	110.1	4.93	6.12	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 5- 60

DATE 4/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.3

RESULTS OF STP CAST 131 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.42	32.78	0	25.00	297.0	0.0	0.0	1493.
10	11.40	32.78	10	25.00	297.1	0.30	0.02	1493.
20	11.28	32.78	20	25.02	295.3	0.59	0.06	1492.
30	10.76	32.79	30	25.12	285.9	0.89	0.14	1491.
50	5.98	32.90	50	25.92	209.8	1.33	0.31	1473.
75	5.76	32.88	75	25.94	208.7	1.85	0.65	1473.
100	5.20	32.88	99	26.00	202.9	2.37	1.11	1471.
125	4.87	33.03	124	26.15	188.3	2.86	1.67	1470.
150	4.92	33.71	149	26.69	138.2	3.26	2.23	1471.
175	4.79	33.81	174	26.78	129.1	3.59	2.78	1471.
200	4.63	33.85	199	26.83	124.6	3.91	3.38	1471.
225	4.43	33.88	223	26.88	120.8	4.22	4.05	1471.
250	4.25	33.90	248	26.91	117.7	4.51	4.77	1471.
300	4.13	33.97	298	26.98	111.6	5.08	6.37	1471.

Surface Salinity and Temperature Observations
(P-76-5)

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 5

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DAY	GMT	0/00	C	WEST
76	6	19	130	31.732b	10.9	125-33
76	6	19	219	31.348b	11.8	126- 0
76	6	19	500	31.871b	11.1	126-40
76	6	19	900	32.135b	11.8	127-40
76	6	19	1300	32.175b	10.9	128-40
76	6	19	1632	32.268		129-40
76	6	19	1950	32.882b	10.8	130-40
76	6	19	2340	32.434		131-40
76	6	20	250	32.465b	10.1	132-40
76	6	20	700	32.460		133-40
76	6	20	930	32.477	9.8	134-40
76	6	20	1325	32.488		135-40
76	6	20	1700	32.523	9.0	136-40
76	6	20	1945	32.508		137-40
76	6	20	2200	32.490	8.6	138-40
76	6	21	250	32.508		139-40
76	6	21	550	32.588	8.6	140-40
76	6	21	945	32.609		141-40
76	6	21	1400	32.712	8.0	142-40
76	6	21	2100	32.739		143-40
76	6	22	0	32.735		ON STATION
76	6	23	0	32.764	8.2	ON STATION
76	6	24	0	32.753	8.1	ON STATION
76	6	25	0	32.770		ON STATION
76	6	26	0	32.776	8.6	ON STATION
76	6	27	0	32.796	8.6	ON STATION
76	6	28	0	32.790	8.5	ON STATION
76	6	29	0	32.762	8.6	ON STATION
76	6	30	0	32.791	8.6	ON STATION
76	7	1	0	32.787	9.2	ON STATION
76	7	2	0	32.784	9.3	ON STATION
76	7	3	0	32.771	9.5	ON STATION
76	7	4	0	32.785	9.6	ON STATION
76	7	5	0	32.771	9.5	ON STATION
76	7	6	0	32.729	9.5	ON STATION
76	7	7	0	32.724	9.8	ON STATION
76	7	8	0	32.749	9.7	ON STATION
76	7	9	0	32.729	9.8	ON STATION
76	7	10	0	32.747	9.9	ON STATION
76	7	11	0	32.739	9.8	ON STATION
76	7	12	0	32.707	9.8	ON STATION
76	7	13	0	32.730	10.4	ON STATION
76	7	14	0	32.718	9.9	ON STATION
76	7	15	0	32.733	11.5	ON STATION

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
 CRUISE REFERENCE NUMBER 76- 5

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DAY	GMT	0/00	C	WEST
76	7	16	0	32.717	10.6	ON STATION
76	7	17	0	32.750	9.9	ON STATION
76	7	18	0	32.732	10.3	ON STATION
76	7	19	0	32.737	9.9	ON STATION
76	7	20	0	32.749	10.4	ON STATION
76	7	21	0	32.729	10.0	ON STATION
76	7	22	0	32.734	10.1	ON STATION
76	7	23	0	32.731	10.8	ON STATION
76	7	24	0	32.717	11.1	ON STATION
76	7	25	0	32.688	11.0	ON STATION
76	7	26	0	32.696	10.8	ON STATION
76	7	27	0	32.701	10.9	ON STATION
76	7	28	0	32.696	11.0	ON STATION
76	7	29	0	32.707	11.1	ON STATION
76	7	30	0	32.704	11.4	ON STATION
76	7	31	0	32.708	11.6	ON STATION
76	8	1	0	32.703	11.4	ON STATION
76	8	2	0	32.704	11.5	ON STATION
76	8	3	0	32.701	11.1	ON STATION
76	8	4	0	32.709	11.5	ON STATION
76	8	5	0	32.704	11.6	ON STATION
76	8	6	0	32.679	11.4	ON STATION
76	8	6	2020	32.717		143-40
76	8	6	2340	32.703	11.2	142-40
76	8	7	340	32.504		141-40
76	8	7	630	32.406	11.6	140-40
76	8	7	1000	32.420		139-40
76	8	7	1315	32.388	11.9	138-40
76	8	7	1605	32.401		137-40
76	8	7	1905	32.432	12.7	136-40
76	8	7	2215	32.407		135-40
76	8	8	135	32.456	13.3	134-40
76	8	8	430	32.409		133-40
76	8	8	820	32.395	13.5	132-40
76	8	8	1140	32.392		131-40
76	8	8	1500	32.327	12.9	130-40

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
 CRUISE REFERENCE NUMBER 76- 5

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
76	8	8	2140	32.313	13.9	128-40
76	8	9	105	32.163	14.2	127-40
76	8	9	420	31.666	14.5	126-40
76	8	9	630	31.053	14.5	126- 0
76	8	9	810	31.498	11.4	125-33

b DENOTES SALINITY SAMPLE TAKEN FROM A
 BUCKET. ALL OTHER SAMPLES TAKEN FROM
 THE SEAWATER LOOP

CA1 EP321

-77R02

Government
Publications

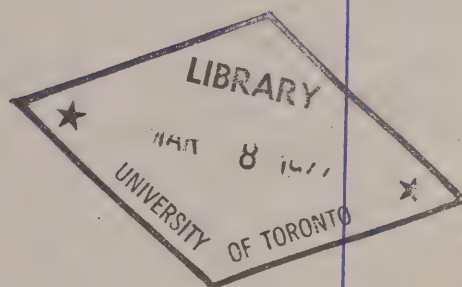
OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P

(50° N., 145° W.)

Volume 75

30 July - 16 September 1976

Seakem Oceanography Ltd.



INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Victoria, B.C.

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Pacific Marine Science Report 77-2

OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P (50°N, 145°W)

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January 1977

This is a manuscript which has received only limited circulation. On citing this report in a bibliography, the title should be followed by the words "UNPUBLISHED MANUSCRIPT" which is in accordance with accepted bibliographic custom.

ABSTRACT

Physical, chemical and biological oceanographic observations are made from the weathership at Ocean Weather Station Papa, and between Esquimalt and Station Papa, on a routine continuing basis. Physical oceanography data only are shown, including profiles obtained with bottle casts, and conductivity-temperature-pressure instruments. Surface observations are also shown.

INTRODUCTION

Canadian operation of Ocean Weather Station P (Latitude $50^{\circ}00'N$, Longitude $145^{\circ}00'W$) was inaugurated in December, 1950. The station is occupied primarily to make meteorological observations of the surface and upper air and to provide an air-sea rescue service. The station is manned by two vessels operated by the Marine Services Branch of the Ministry of Transport. They are the CCGS Vancouver and the CCGS Quadra. Each ship remains on station for a period of six weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch.

Bathythermograph observations have been made at Station P since July 1952. A program of more extensive oceanographic observations commenced in August 1956. This was extended in April 1959, by the addition of a series of oceanographic stations along the route to and from Station P and Swiftsure Bank. These stations are known as Line P stations. The number of stations on Line P has been increased twice and now consists of twelve stations (Fig. 1). Bathythermograph observations and surface salinity sample collections, in addition to being made on Line P oceanographic stations, are also made at odd meridians at $40'$, i.e. $139^{\circ}40'W$, $141^{\circ}40'W$, etc. These stations are known as Line P BT stations. Data observed prior to 1968 has been indexed by Collins et al. (1969).

The present record includes hydrographic, continuously sampled STP and surface salinity and temperature data collected from the CCGS Vancouver during the period 30 July to 16 September 1976.

All physical oceanographic data have been stored by the Canadian Oceanographic Data Centre (CODC), 615 Booth Street, Ottawa, Ontario, Canada. Requests for these data should be directed to CODC.

Biological and productivity data are published in the Manuscript Report series of the Fisheries Research Board of Canada (FRB), the Pacific Biological Station, Nanaimo, British Columbia, Canada. Requests for these data should be directed to FRB.

Marine geochemical data are for the Ocean Chemistry Group, Ocean and Aquatic Sciences, Environment Canada, 512 - 1230 Government Street, Victoria, British Columbia, Canada.

PROGRAM OF OBSERVATIONS FROM CCGS VANCOUVER, 30 July - 16 September 1976
(P-76-6) (CODC Ref. No. 15-76-006)

Oceanographic observations were made by Mr. B. Canning of Seakem Oceanography Ltd., Victoria, B. C., and Mr. P. Stewart of IOUBC.

En route to Station P, only Station 12 was occupied and a STP profile made to near bottom or 1500 metres. All other stations were missed because the cruise was five days behind schedule.

Samples for nitrate, nutrient, alkalinity and total CO₂ were taken at all stations except for Station 4. The seawater loop was used on all stations except for Stations 5 and 10 to 12.

A 10 minute tarball tow was made at Station 12.

The thermosalinograph, surface temperature recorder, and PCO₂ system were run continuously.

Salinity samples were collected from the seawater loop at all whole and half stations except for Station 4 and surface bucket salinities at Stations 5, 8½, and 10 to 12.

XBT's were taken at all Line P and BT stations, except for Station 12.

At Station P the oceanographic program was carried out as follows:

I. Physical Oceanography

- 1) Profiles of salinity, temperature and oxygen were obtained from 6 hydrographic stations to near bottom (4200 metres).
- 2) 36 STP profiles to 1500 metres and 2 to 300 metres were obtained.
- 3) BT's were taken every three hours to coincide with meteorological observations, encoded and transmitted according to the IGOSS format.
- 4) Salinity samples were taken daily at 0000 hrs GMT from the seawater loop.

II. Marine Geochemistry

- 1) 2 profiles for nutrients were taken to 500 m and one 24 hour series of nutrient samples, one per hour, was taken.
- 2) Salinity samples were collected daily at 0000 hrs GMT.

- 3) Air CO₂ samples weekly in quadruplicate.
- 4) 6 surface tarball tows of 10 minutes duration each were taken.
- 5) 2 seawater C-14 samples were taken from the seawater loop. 2 seawater C-13 and 2 air C-13 samples were also taken.

III. Biological and Productivity

Samples were obtained as follows:

- 1) 28 - 150 metre vertical plankton hauls.
2 - 1200 metre vertical plankton hauls.
3 Secchi disc readings were taken.
3 groups of surface plankton tows were taken on 3 consecutive nights at sunset.
- 2) 2 profiles and 4 surface samples and C-14 productivity were obtained and 3 profiles and 4 surface samples for nitrates were taken.

En route from Station P, STD casts were taken at Stations 12 and 6 to 1. Nutrient, nitrate, alkalinity, and total CO₂ samples were taken at Stations 10 to 1. Salinity samples were also taken at all whole and half stations except 11 and 12. Mechanical XBT's were taken at all half stations and Stations 12 to 7. 3 tarball tows were taken. The thermosalinograph and surface temperature recorder operated only intermittently due to ship's lateral roll. The PCO₂ system ran continuously. One hydrocast was taken at Station 6 to 1500 m for temperature and salinity.

Observations for Other Agencies

- 1) Marine mammal observations were made by the ship's officers for Mr. I. McAskie, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B.C., Canada.
- 2) Bird observations were made by the ship's officers for Dr. M. Myres, University of Alberta, Calgary, Alberta, Canada and Mr. J. Guiguet, Curator of Birds and Mammals, Provincial Museum, Department of Recreation and Conservation, Victoria, British Columbia, Canada.
- 3) Air CO₂ samples were taken weekly in duplicate for Scripps Institution of Oceanography, La Jolla, San Diego, California, U.S.A.

Data was processed for publication by Ms. M. Sainsbury of Seakem Oceanography Ltd., Victoria, B.C.

OBSERVATIONAL PROCEDURES

Observations for salinity, oxygen and temperature from all hydrographic casts, including the surface, were obtained with Niskin water sample bottles equipped with either Richter and Wiese and /or Yoshino Keiki Co. reversing thermometers. Two protected thermometers were used on all bottles, and one unprotected thermometer was used on each bottle at depths of 300 m or greater. The accuracy of protected reversing thermometers is believed to be $\pm 0.02^{\circ}\text{C}$.

The daily surface water temperatures were measured from a bucket sample using a deck thermometer of $\pm 0.1^{\circ}\text{C}$ accuracy. The daily surface salinity samples were obtained from the seawater loop. When the seawater loop was not operational these samples were obtained with a bucket, and are indicated with a "b" in this data record.

Salinity determinations were made aboard ship with either an Autolab Model 601 Mark III inductive salinometer or a Hytech Model 6220 lab salinometer. Accuracy using duplicate determinations is estimated to be ± 0.003 ‰.

Depth determinations were made using the "depth difference" method described in the U.S.N. Hydrographic Office Publication No. 607 (1955). Depth estimates have an approximate accuracy of ± 5 m for depths less than 1000 m, and $\pm 0.5\%$ of depth for depths greater than 1000 m.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Carpenter, 1965).

Line P engine intake continuous temperatures were recorded by a Honeywell Elektronik 15 Recorder. The temperature probe is at a depth of approximately 3 metres below the sea surface and the instrument accuracy is believed to be $\pm 0.1^{\circ}\text{C}$.

Each ship is equipped with a Plessey Model 6600-T thermosalinograph which is used, on Line P, for continuous recording of surface temperatures and salinities from the ship's seawater loop. The temperature probe is mounted at the seawater loop intake (approximately 3 metres below the surface) and the salinity probe and recorder are situated in the dry lab. The accuracy of this instrument is believed to be $\pm 0.1^{\circ}\text{C}$ for temperature and ± 0.1 ‰ for salinity.

STP profiles were taken with a Guildline Model 8700 STP System.

COMPUTATIONS

All hydrographic data were processed with the aid of an IBM 370 computer. Reversing thermometer temperature corrections, thermometric depth calculations, and accepted depth from the "depth difference" method were

computed. Extraneous thermometric depths caused by thermometer malfunctions are automatically edited and replaced. A Calcomp 565 Offline Plotter was used to plot temperature-salinity and temperature-oxygen vs \log_{10} depth. These plots were used to check the data for errors.

Missing hydrographic data were obtained using a weighted parabolas interpolation method (Reiniger and Ross, 1968). These data are indicated with an asterisk in this data record.

Data values which we suspect but which we have included in this data record are indicated with a plus. These data have been removed from punch card and magnetic tape records.

Analog records from the salinity-temperature-pressure instrument have been machine digitized, then replotted using the Calcomp Plotter.

Digitization was continued until original and computer plotted traces were coincident. Temperature and salinity values were listed at standard pressures; integrals (depths, geopotential anomaly, and potential energy anomaly) were computed from the entire array of digitized data.

The headings for the data listings are explained as follows:

PRESS	is pressure (decibars)
TEMP	is temperature (degrees Celsius)
SAL	is salinity (parts per thousand)
DEPTH	is reported in metres
SIGMA-T	is specific gravity anomaly
SVA	is specific volume anomaly
THETA	is potential temperature (degrees Celsius)
SVA (THETA)	is potential specific volume anomaly
DELTA D	is geopotential anomaly (J/kg)
POT EN	is potential energy in units of 10^8 ergs/cm ²
OXY	is the concentration of dissolved oxygen expressed in millilitres per litre
B-V PERIOD	is the Brunt-Vaisala period in minutes

REFERENCES

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- Reiniger, R.F. and C.K. Ross, 1968. A method of interpolation with application to oceanographic data. *Deep Sea Res.*, 15: 185-193.

U.S.N. Hydrographic Office, 1955. Instruction manual for oceanographic observations, Publ. No. 607.

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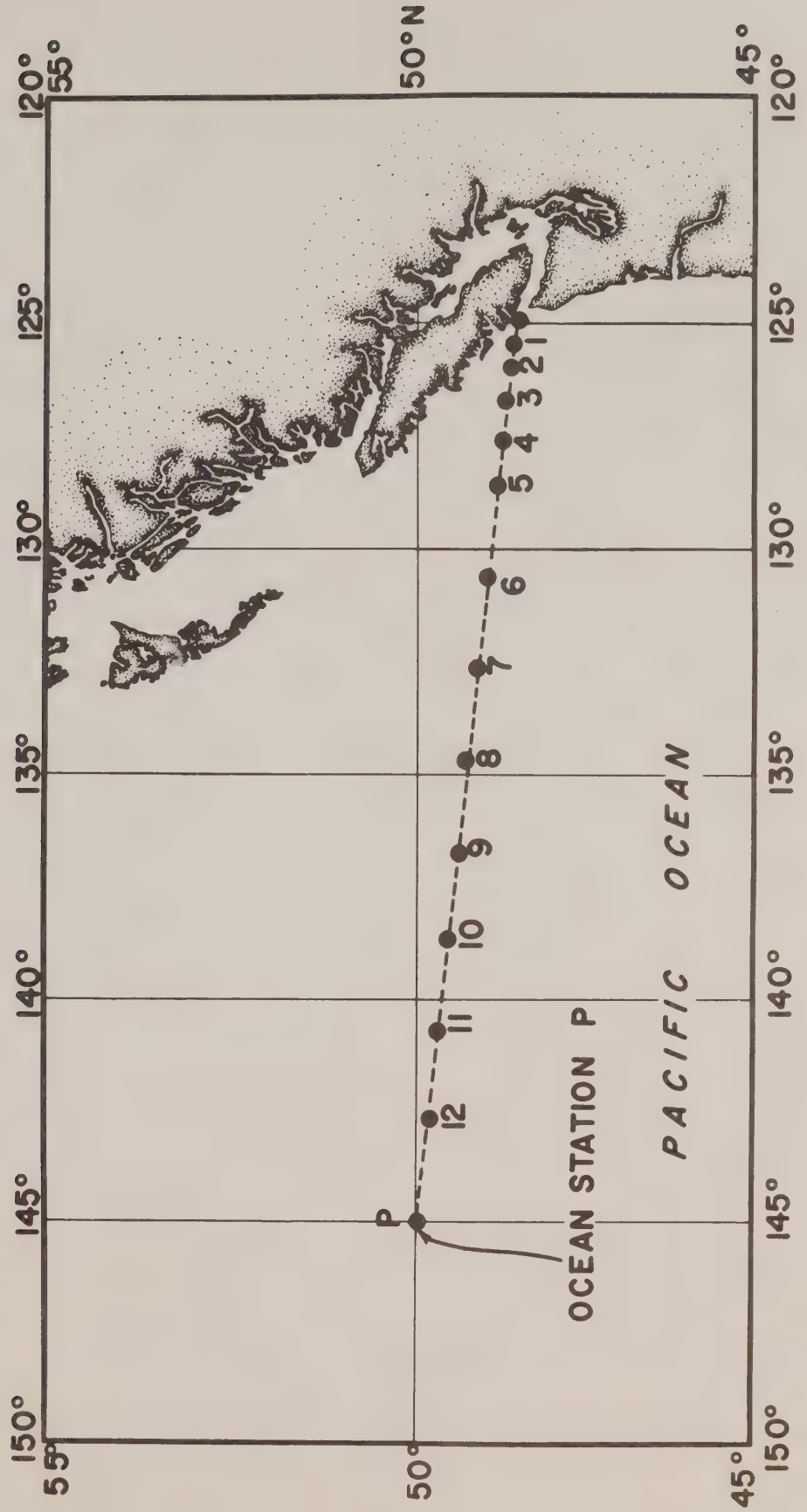


Fig. 1 Chart showing Line P station positions.

Oceanographic Data Obtained on Cruise P-76-6

(CODC Reference No. 15-76-006)

Results of Hydrographic Observations

(P-76-6)

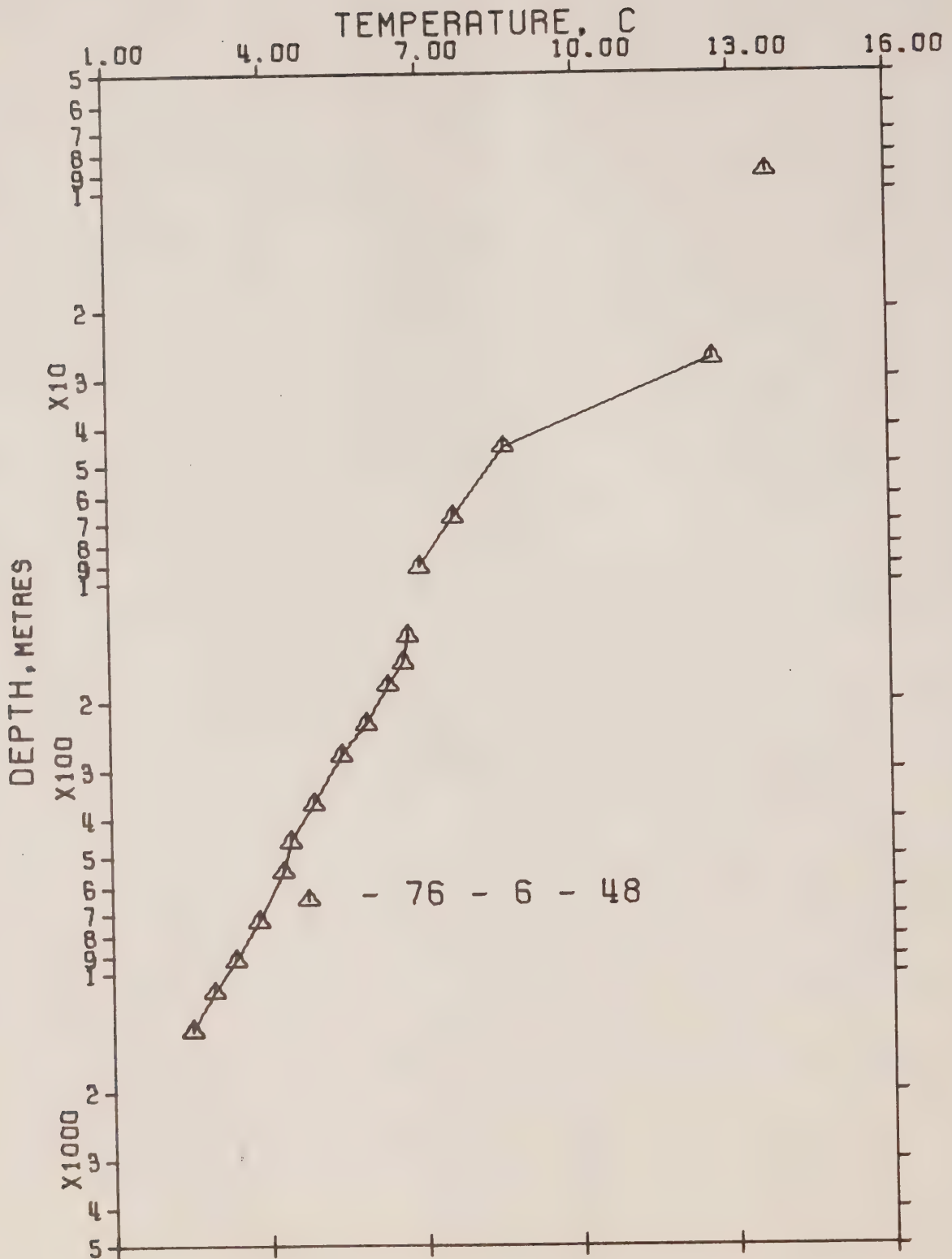


Figure 2. Composite plot of temperature vs \log_{10} depth for Line P stations. P-76-6.

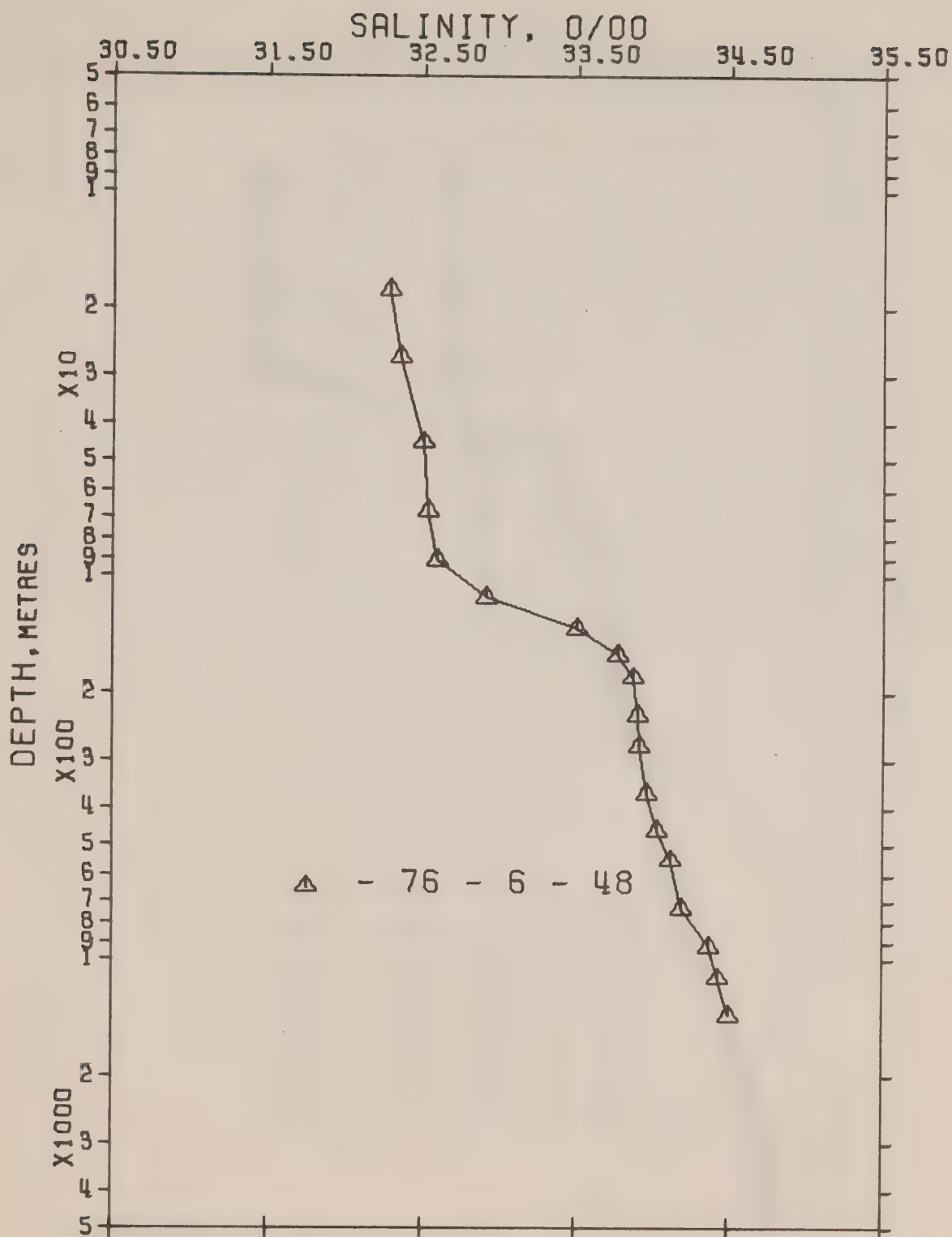


Figure 3. Composite plot of salinity vs. \log_{10} depth for Line P stations. P-76-6.

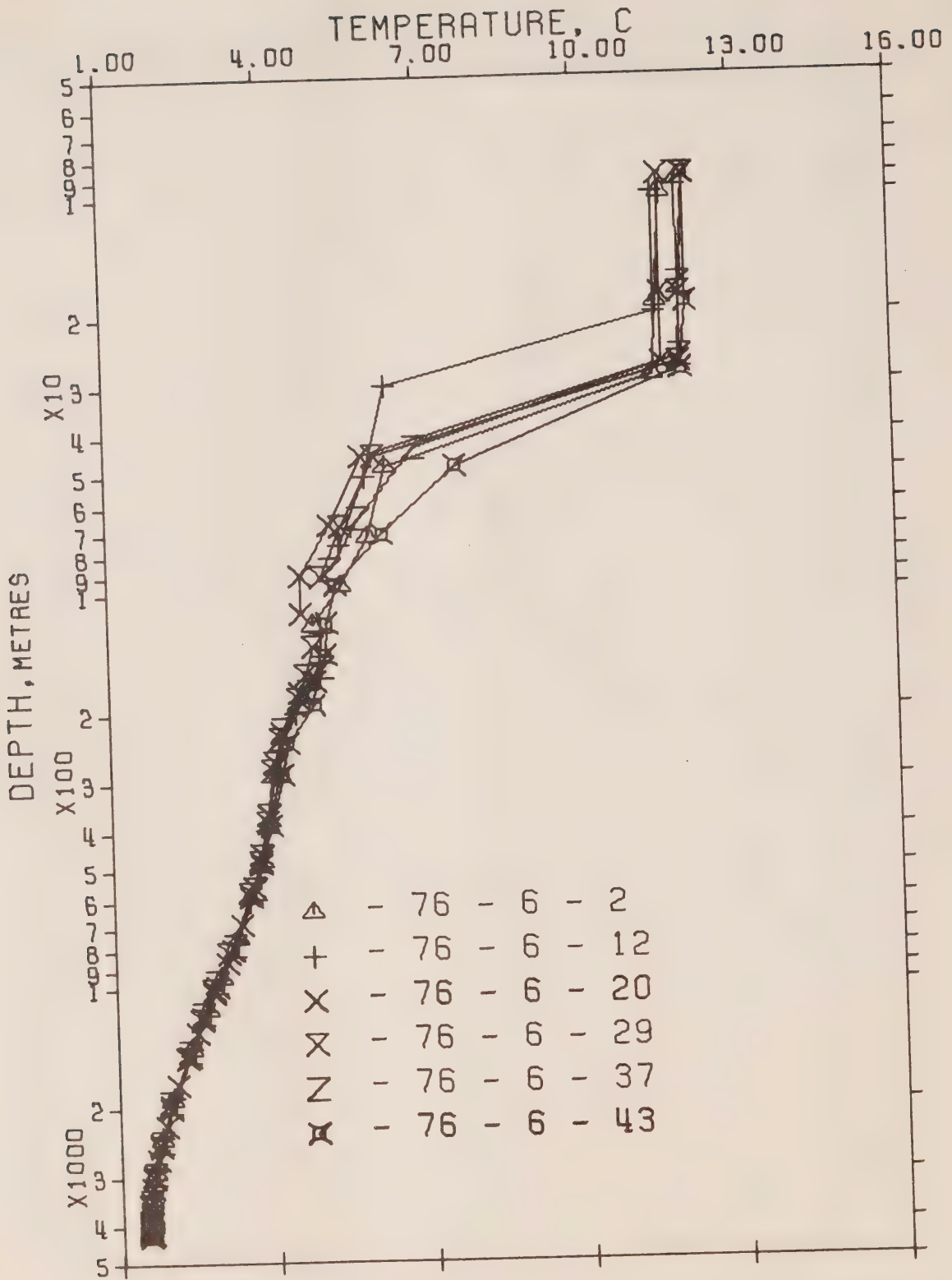


Figure 4. Composite plot of temperature vs \log_{10} depth for Station P. P-76-6.

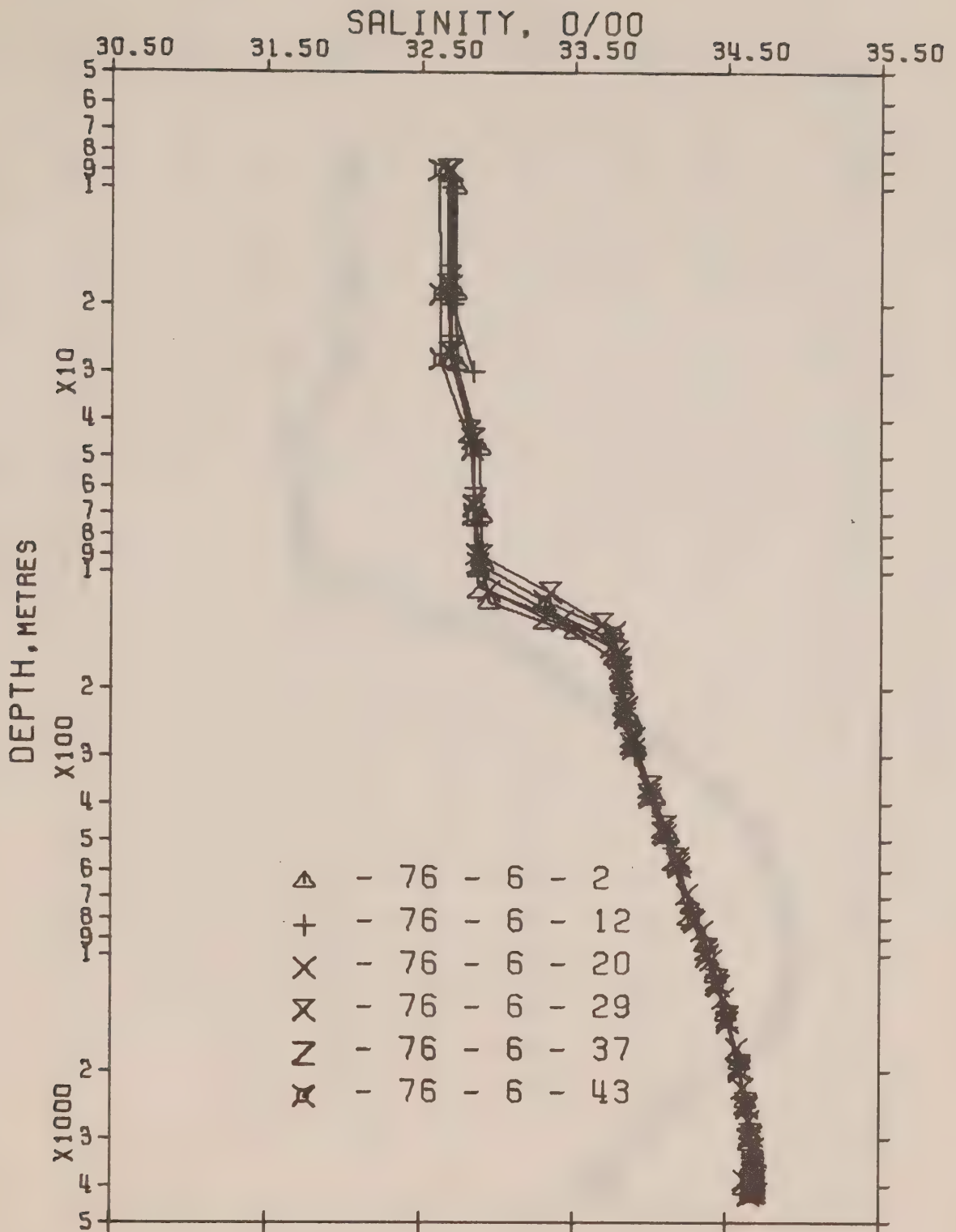


Figure 5. Composite plot of salinity vs \log_{10} depth for Station P. P-76-6.

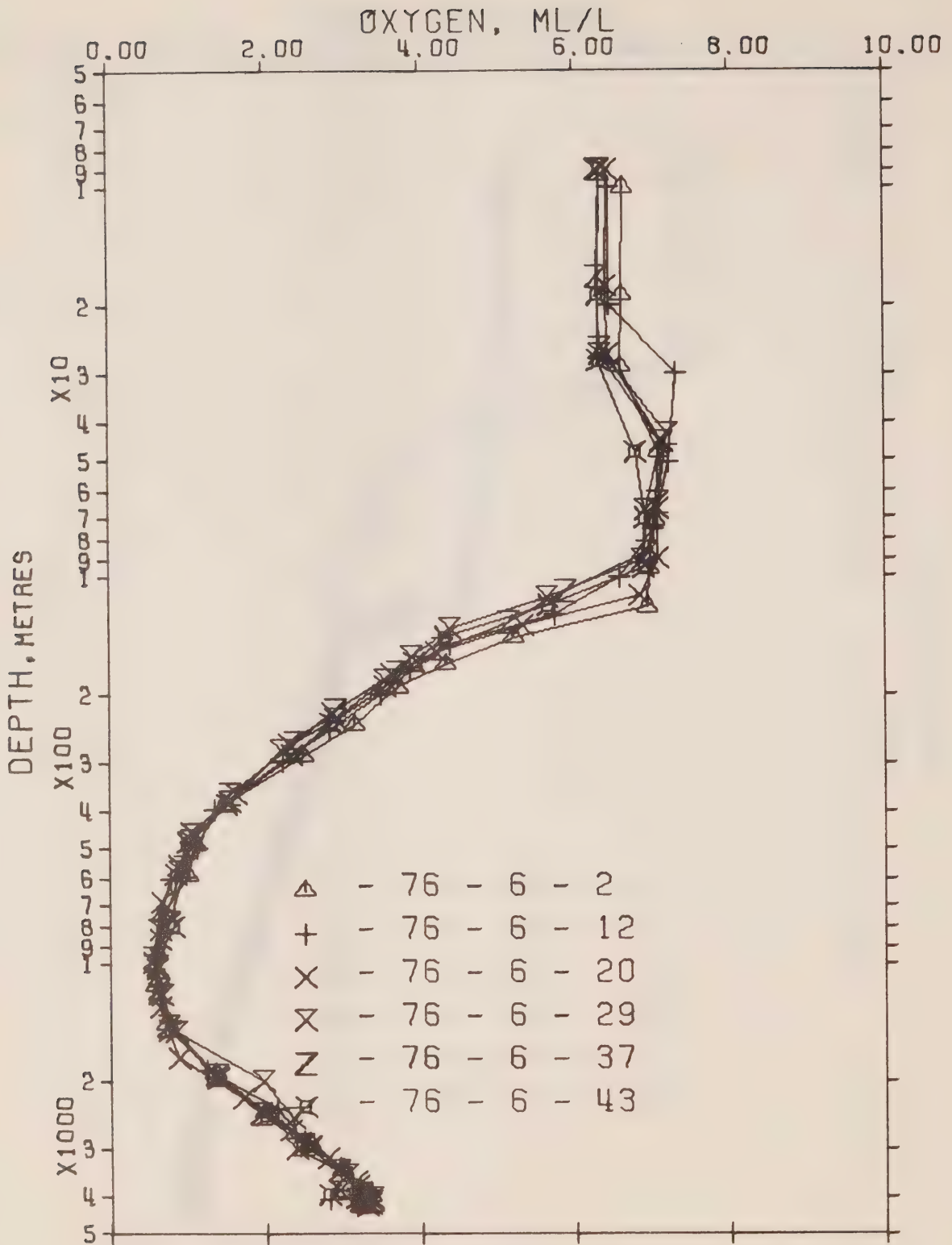
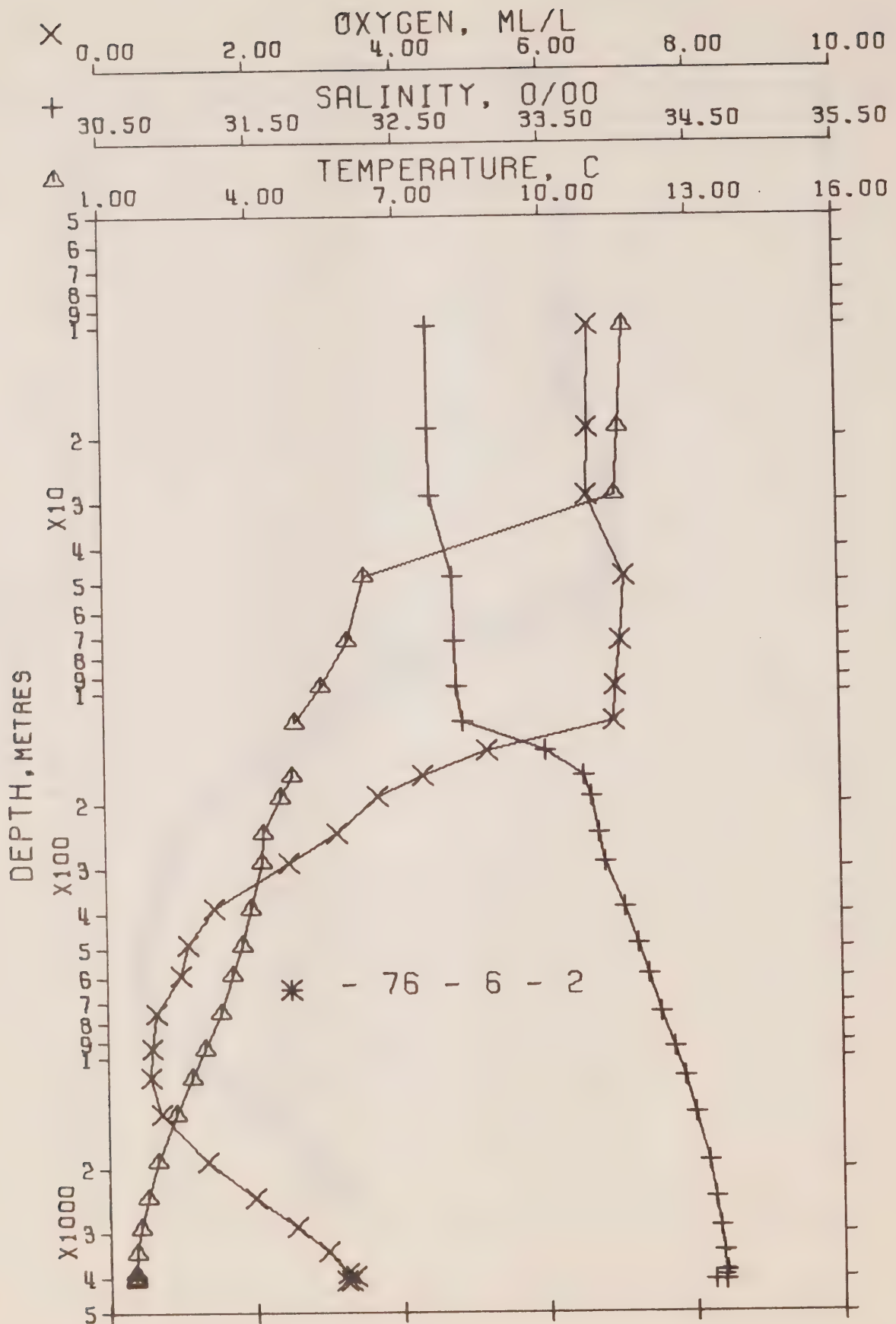


Figure 6. Composite plot of oxygen vs \log_{10} depth for Station P. P-76-6.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 2

DATE 7/ 8/76

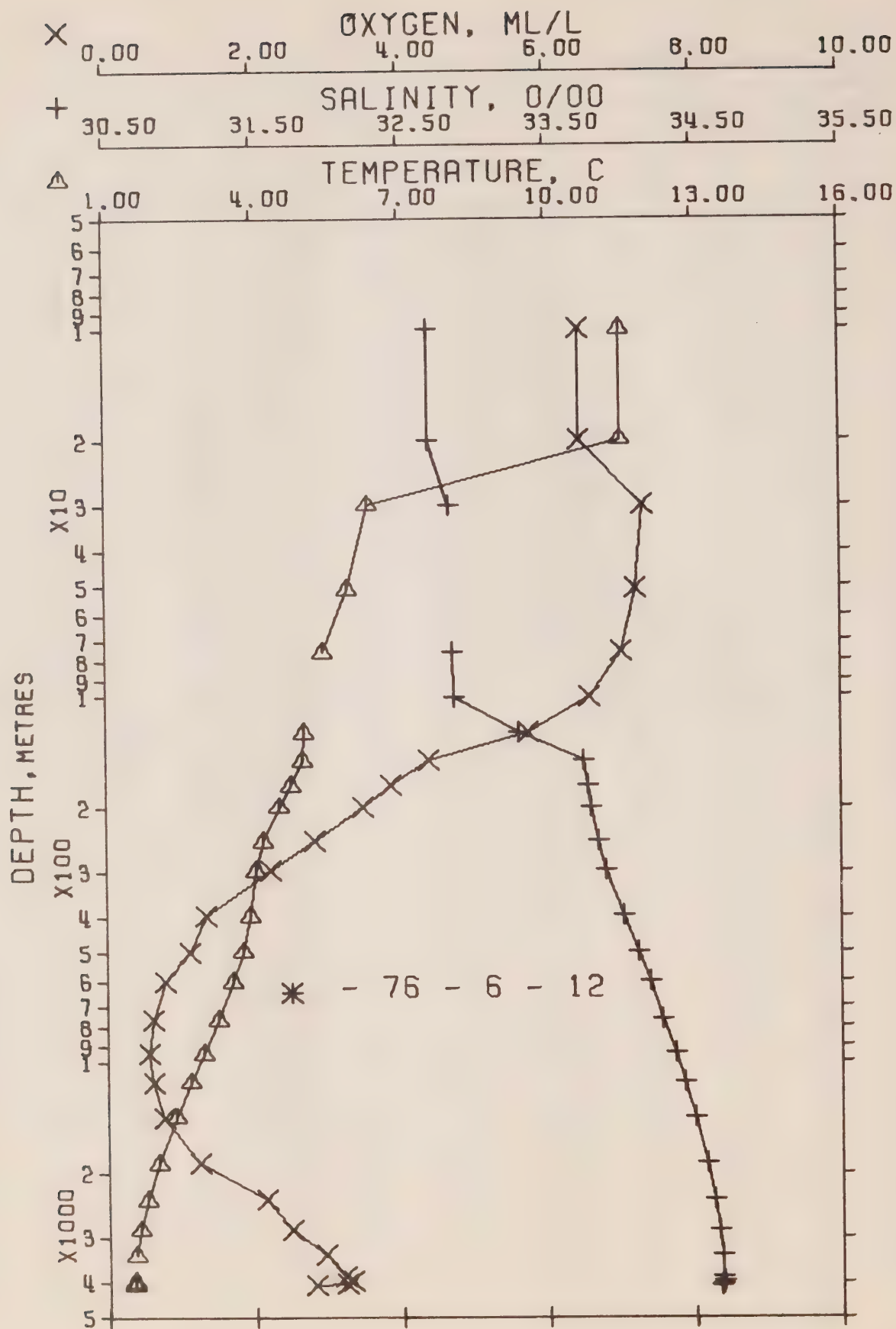
GMT 17.3

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.72	32.719	0	24.895	306.9	11.72	306.7	0.0	0.0	6.61	1494.
10	11.68	32.723	10	24.905	306.1	11.68	305.7	0.31	0.02	6.63	1494.
19	11.57	32.724	19	24.926	304.3	11.57	303.7	0.58	0.06	6.62	1493.
20*	11.56	32.725	20	24.929	304.1	11.56	303.4	0.61	0.06	6.62	1493.
29	11.46	32.734	29	24.954	301.9	11.46	301.1	0.90	0.13	6.59	1493.
30*	11.17	32.742	30	25.012	296.4	11.17	295.4	0.92	0.14	6.62	1492.
48	6.30	32.881	48	25.867	215.1	6.30	214.2	1.36	0.32	7.10	1474.
50*	6.27	32.882	50	25.872	214.6	6.27	213.8	1.40	0.34	7.10	1474.
72	5.96	32.889	72	25.916	210.7	5.95	209.5	1.88	0.63	7.03	1473.
75*	5.89	32.890	75	25.925	209.8	5.89	208.6	1.93	0.67	7.02	1473.
97	5.40	32.899	96	25.991	203.7	5.39	202.4	2.38	1.07	6.96	1471.
100*	5.32	32.905	100	26.005	202.3	5.31	201.0	2.45	1.13	6.96	1471.
121	4.87	32.937	120	26.081	195.3	4.86	193.9	2.87	1.61	6.94	1470.
125*	4.86	33.043	125	26.165	187.3	4.86	185.8	2.95	1.71	6.61	1470.
145	4.84*	33.499	144	26.529	153.0	4.83	151.3	3.28	2.17	5.20	1471.
150*	4.84	33.557	149	26.575	148.7	4.83	146.9	3.36	2.28	5.01	1471.
169	4.82	33.760	168	26.738	133.5	4.81	131.4	3.63	2.72	4.32	1471.
175*	4.76	33.772	174	26.755	131.9	4.74	129.8	3.71	2.86	4.16	1471.
193	4.57	33.809	192	26.804	127.3	4.56	125.1	3.94	3.30	3.70	1471.
200*	4.52	33.817	199	26.816	126.3	4.50	124.0	4.03	3.47	3.62	1471.
225*	4.34	33.843	225	26.856	122.6	4.32	120.2	4.34	4.14	3.33	1470.
243	4.22	33.860	241	26.882	120.3	4.20	117.8	4.55	4.66	3.14	1470.
250*	4.22	33.867	249	26.888	119.7	4.20	117.1	4.64	4.88	3.04	1470.
292	4.19	33.902	290	26.919	117.2	4.17	114.2	5.14	6.26	2.48	1471.
300*	4.17	33.914	299	26.930	116.2	4.14	113.1	5.23	6.54	2.39	1471.
391	3.93	34.033	388	27.049	105.5	3.90	101.8	6.24	10.07	1.47	1472.
400*	3.91	34.042	398	27.058	104.8	3.89	100.9	6.33	10.45	1.43	1472.
492	3.77	34.123	488	27.137	97.9	3.74	93.4	7.26	14.68	1.09	1473.
500*	3.75	34.128	497	27.143	97.4	3.72	92.8	7.34	15.08	1.09	1473.
595	3.56	34.186	550	27.205	91.6	3.52	86.5	8.24	20.08	1.01	1474.
600*	3.55	34.191	595	27.213	91.4	3.51	86.2	8.28	20.36	1.00	1474.
700*	3.38	34.247	698	27.274	86.1	3.33	80.3	9.17	26.24	0.78	1475.
755	3.30	34.275	748	27.304	83.6	3.25	77.4	9.63	29.69	0.67	1475.
800*	3.22	34.296	797	27.328	81.4	3.16	75.2	10.01	32.64	0.65	1476.
900*	3.06	34.335	895	27.377	77.2	3.00	70.5	10.80	37.51	0.62	1477.
946	2.99	34.357	937	27.398	75.4	2.93	68.5	11.15	42.81	0.60	1477.
1000*	2.91	34.379	994	27.423	73.2	2.84	66.1	11.55	46.79	0.59	1478.
1140	2.71	34.431	1129	27.482	68.1	2.63	60.5	12.54	57.59	0.58	1479.
1200*	2.63	34.447	1193	27.501	66.3	2.55	58.0	12.94	62.37	0.61	1480.
1436	2.37	34.505	1420	27.570	60.3	2.27	52.0	14.43	82.31	0.72	1483.
1500*	2.31	34.517	1492	27.584	59.1	2.21	50.5	14.81	88.07	0.81	1484.
1935	1.99	34.589	1912	27.668	52.0	1.86	42.5	17.21	130.04	1.34	1490.
2000*	1.96	34.595	1982	27.675	51.4	1.82	41.8	17.35	136.75	1.43	1491.
2442	1.77	34.634	2410	27.721	47.9	1.60	37.2	19.73	186.22	1.98	1497.
2500*	1.75	34.637	2472	27.725	47.6	1.57	36.8	20.01	193.16	2.05	1498.
2950	1.62	34.661	2908	27.754	45.6	1.40	33.8	22.10	251.37	2.54	1505.
3000*	1.61	34.664	2960	27.756	45.4	1.39	33.5	22.33	258.20	2.59	1506.
3456	1.53	34.685	3402	27.780	44.1	1.26	31.1	24.46	328.53	2.97	1513.
3500*	1.53	34.686	3448	27.801	42.2	1.26	29.0	24.65	335.31	2.99	1514.
3953	1.52	34.692	3887	28.002	25.7	1.20	9.6	25.63	370.89	3.22	1522.
4000*	1.52	34.693	3933	27.898	35.0	1.20	19.5	25.78	376.68	3.27	1523.
4050	1.52	34.695	3982	27.788	44.7	1.19	29.8	25.98	385.02	3.31	1524.
4100*	1.52	34.690	4031	27.784	45.3	1.19	30.2	26.21	394.44	3.29	1524.
4137	1.52	34.686	4067	27.781	45.6	1.18	30.5	26.37	401.32	3.27	1525.
4148	1.52	34.616 +	4077	27.725	50.6	1.18	35.8	26.42	403.41	3.21	1525.



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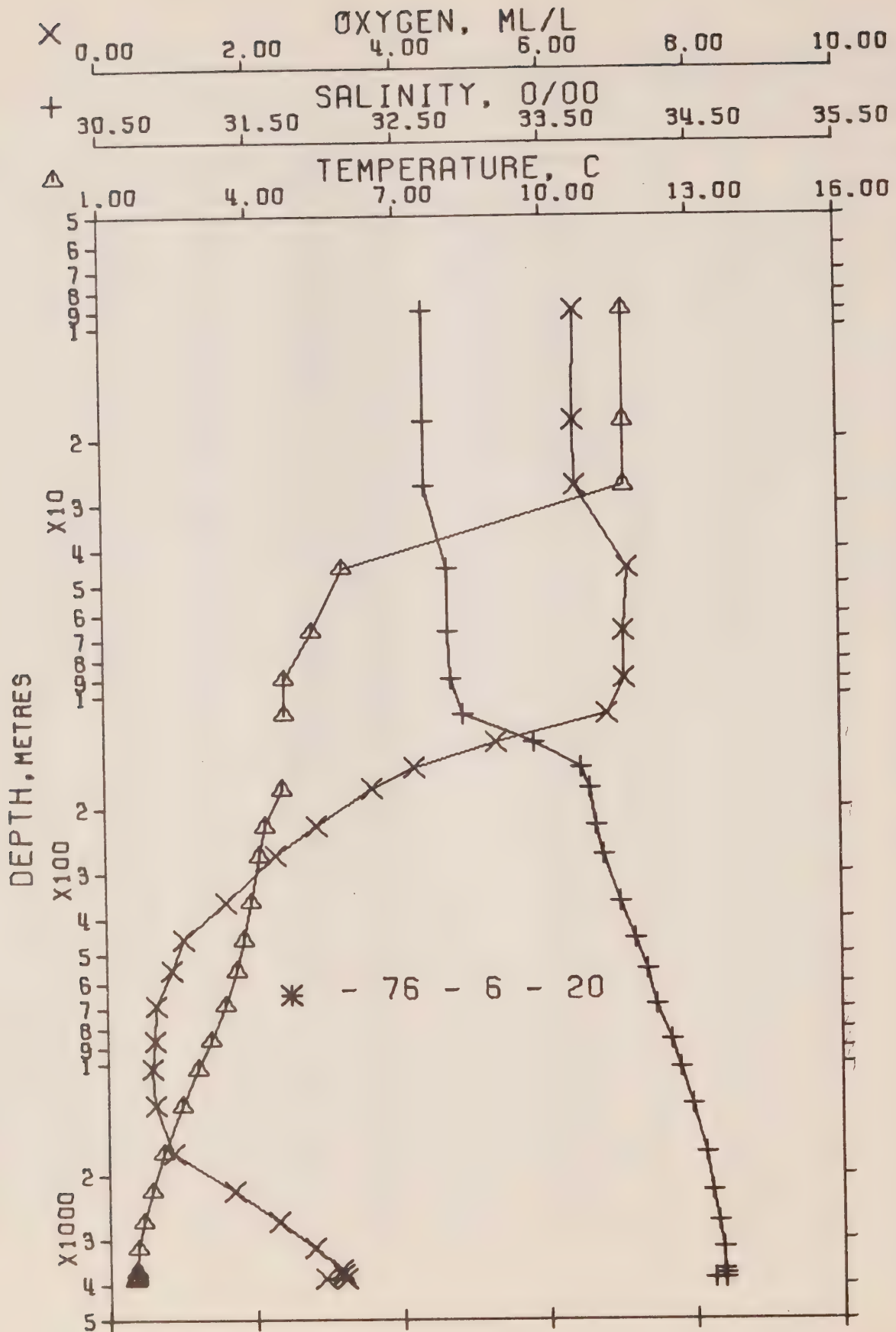
DATE 14/ 8/76 GMT 17.1

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.57	32.697	0	24.905	305.9	11.57	305.7	0.0	0.0	6.45	1493.
10	11.52	32.696	10	24.914	305.4	11.52	304.9	0.31	0.02	6.46	1493.
20	11.53	32.697	20	24.913	305.7	11.53	305.0	0.62	0.06	6.46	1493.
30	6.35	32.846	30	25.833	218.1	6.35	217.5	0.89	0.13	7.33	1474.
50*	5.93	32.855	50	25.893	212.6	5.93	211.8	1.28	0.30	7.22	1473.
51	5.91	32.855 *	51	25.896	212.3	5.91	211.4	1.31	0.31	7.22	1473.
75*	5.43	32.863	75	25.958	206.5	5.43	205.6	1.81	0.63	7.02	1471.
76	5.41	32.863	76	25.961	206.3	5.40	205.2	1.84	0.66	7.01	1471.
100*	5.20	32.872	100	25.993	203.5	5.20	202.2	2.32	1.09	6.61	1471.
102	5.19*	32.873	101	25.994	203.3	5.18	202.0	2.35	1.12	6.59	1471.
125*	5.03	33.282	124	26.336	171.2	5.02	169.6	2.80	1.64	5.79	1471.
127	5.02	33.311	126	26.360	168.9	5.01	167.3	2.83	1.68	5.74	1471.
150*	4.99	33.731	149	26.696	137.4	4.98	135.5	3.18	2.18	4.44	1472.
151	4.99	33.748	150	26.709	136.1	4.98	134.1	3.20	2.20	4.38	1472.
175*	4.77	33.781	174	26.760	131.4	4.76	129.3	3.51	2.72	3.88	1471.
176	4.76	33.783	175	26.763	131.2	4.75	129.1	3.53	2.75	3.86	1471.
200*	4.52	33.803	199	26.805	127.4	4.51	125.1	3.84	3.34	3.50	1471.
201	4.51	33.804	200	26.807	127.1	4.50	124.9	3.85	3.38	3.48	1471.
225*	4.34	33.826	225	26.843	123.9	4.32	121.5	4.15	4.02	3.14	1470.
250*	4.18	33.847	248	26.877	120.8	4.16	118.2	4.45	4.76	2.82	1470.
251	4.17	33.848	249	26.878	120.7	4.15	118.1	4.46	4.78	2.81	1470.
300*	4.04	33.899	298	26.931	116.0	4.02	113.1	5.05	6.41	2.24	1470.
301	4.04	33.900	299	26.933	115.9	4.02	112.9	5.06	6.46	2.23	1470.
400*	3.91	34.020	397	27.041	106.4	3.88	102.6	6.16	10.38	1.34	1472.
401	3.91	34.021	398	27.042	106.3	3.88	102.5	6.17	10.43	1.33	1472.
500*	3.75	34.114	496	27.132	98.5	3.72	93.9	7.18	15.08	1.12	1473.
503	3.75	34.117	499	27.134	98.2	3.71	93.6	7.21	15.24	1.11	1473.
600*	3.56	34.195	595	27.215	91.2	3.52	86.0	8.13	20.39	0.81	1474.
607	3.55	34.200	602	27.220	90.7	3.51	85.5	8.20	20.80	0.78	1474.
700*	3.38	34.250	699	27.277	85.9	3.33	80.1	9.01	26.24	0.68	1475.
772	3.26	34.285	765	27.315	82.5	3.21	76.4	9.62	30.79	0.61	1475.
800*	3.21	34.299	795	27.331	81.2	3.15	74.8	9.85	32.62	0.60	1476.
900*	3.03	34.344	895	27.384	76.5	2.97	69.8	10.64	39.44	0.58	1477.
955	2.94	34.367	946	27.410	74.2	2.87	67.3	11.05	43.37	0.56	1477.
1000*	2.87	34.383	993	27.429	72.5	2.80	65.4	11.38	46.65	0.58	1478.
1141	2.68	34.431	1130	27.484	67.7	2.60	60.2	12.37	57.45	0.63	1479.
1200*	2.61	34.446	1193	27.502	66.2	2.53	58.5	12.76	62.13	0.66	1480.
1425	2.39	34.439	1410	27.563	61.0	2.29	52.6	14.19	81.25	0.75	1483.
1500*	2.32	34.513	1493	27.580	59.5	2.22	51.0	14.64	87.95	0.84	1484.
1910	2.01	34.581	1887	27.660	52.7	1.88	43.2	16.92	127.60	1.24	1489.
2000*	1.97	34.591	1984	27.671	51.8	1.83	42.1	17.39	136.98	1.43	1491.
2405	1.79	34.632	2373	27.718	48.1	1.62	37.5	19.41	182.14	2.15	1497.
2500*	1.76	34.638	2474	27.725	47.6	1.58	36.8	19.86	193.55	2.21	1498.
2909	1.63	34.662	2867	27.754	45.5	1.42	33.8	21.76	245.85	2.48	1505.
3000*	1.61	34.665	2963	27.757	45.4	1.39	33.5	22.18	258.35	2.57	1506.
3421	1.54	34.677	3368	27.772	44.6	1.28	31.7	24.06	320.11	2.95	1513.
3500*	1.54	34.678	3450	27.773	44.8	1.27	31.6	24.42	332.59	2.99	1514.
3937	1.52	34.681	3872	27.777	45.5	1.21	31.0	26.40	407.75	3.20	1522.
4000*	1.52	34.686	3933	27.781	45.3	1.20	30.6	26.68	419.26	3.26	1523.
4041	1.52	34.689	3973	27.783	45.1	1.19	30.3	26.87	426.84	3.29	1523.
4100*	1.52	34.683	4031	27.778	45.8	1.19	30.7	27.14	437.97	3.25	1524.
4134	1.52	34.679	4064	27.775	46.1	1.18	31.0	27.29	444.58	3.23	1525.
4145	1.51	34.672	4074	27.771	46.5	1.17	31.5	27.34	446.59	2.81+	1525.



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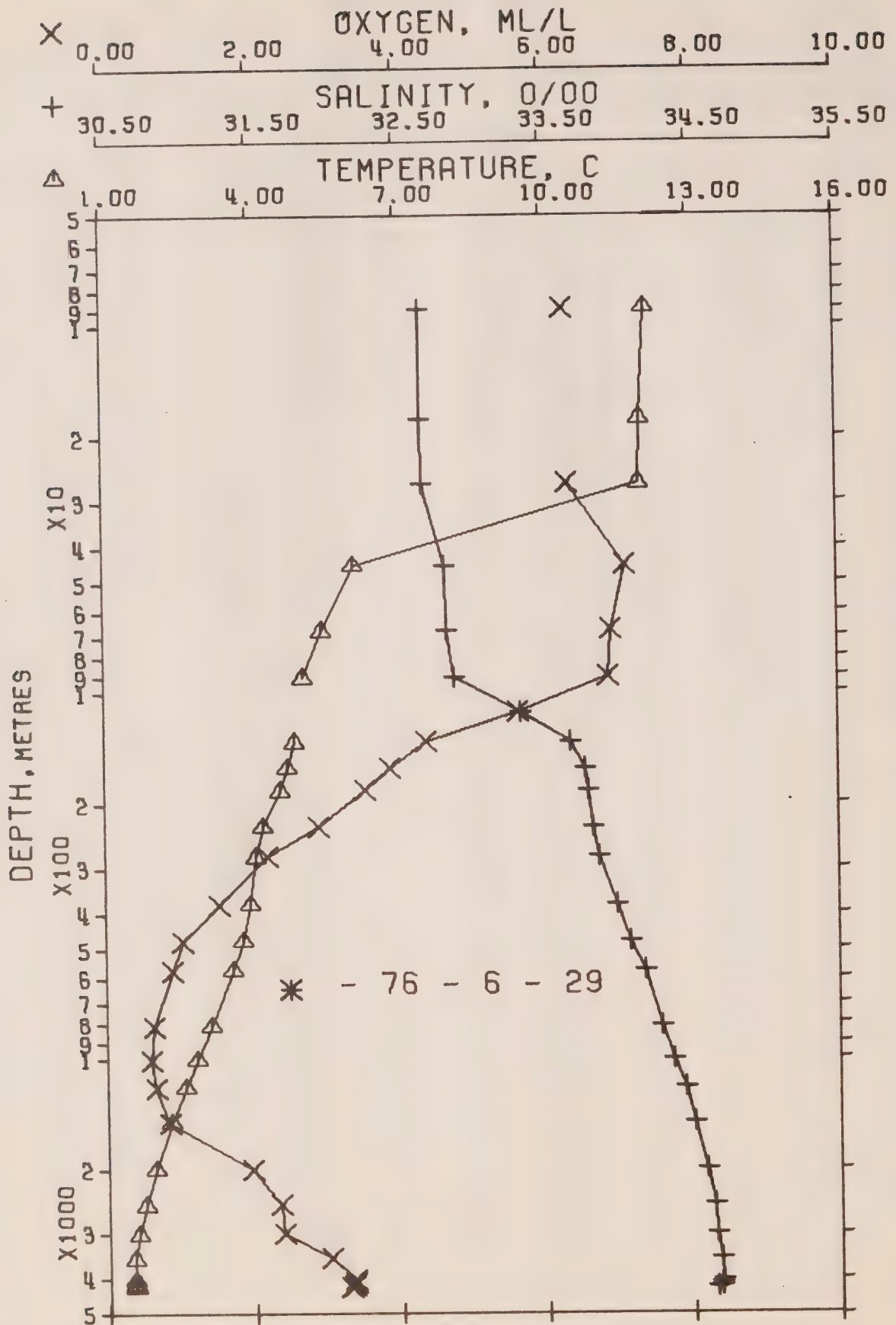
POSITION 50- 0.0 N, 145- 0.0 W

STATION

P

HYDROGRAPHIC CAST DATA

PRSS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	UXY	SOUND
0	11.68	32.690	0	24.880	308.4	11.68	308.1	0.0	0.0	6.38	1493.
9	11.65	32.690	9	24.885	308.0	11.65	307.6	0.28	0.01	6.44	1493.
10*	11.65	32.690	10	24.885	308.1	11.65	307.6	0.31	0.02	6.43	1494.
18	11.66	32.690	18	24.883	308.4	11.66	307.8	0.56	0.05	6.42	1494.
20*	11.66	32.690	20	24.884	308.4	11.66	307.7	0.62	0.06	6.43	1494.
27	11.66	32.692	27	24.885	303.5	11.66	307.6	0.84	0.12	6.44	1494.
30*	10.53	32.722	30	25.109	287.2	10.53	286.4	0.93	0.14	6.58	1490.
45	5.85	32.845	45	25.895	212.4	5.85	211.5	1.29	0.28	7.14	1472.
50*	5.70	32.844	50	25.913	210.7	5.69	209.9	1.39	0.33	7.12	1472.
67	5.24	32.843	67	25.965	205.8	5.23	204.8	1.75	0.55	7.07	1470.
75*	5.03	32.848	75	25.993	203.2	5.02	202.2	1.91	0.66	7.08	1469.
91	4.66	32.857	90	26.040	198.8	4.65	197.7	2.22	0.92	7.08	1468.
100*	4.66	32.893	100	26.069	196.1	4.65	195.0	2.41	1.10	6.98	1468.
113	4.65	32.936	112	26.104	192.9	4.64	191.6	2.66	1.37	6.85	1469.
125*	4.64	33.214	125	26.326	172.0	4.63	170.6	2.88	1.65	5.96	1469.
135	4.63*	33.419	134	26.489	150.7	4.62	155.1	3.04	1.86	5.31	1470.
150*	4.62	33.637	149	26.662	140.4	4.61	138.7	3.27	2.19	4.57	1470.
158	4.61*	33.744	157	26.748	132.3	4.60	130.5	3.38	2.36	4.21	1470.
175*	4.60	33.784	174	26.781	129.3	4.59	127.3	3.60	2.73	3.75	1471.
180	4.60	33.796	179	26.791	128.5	4.59	126.4	3.66	2.85	3.62	1471.
200*	4.44	33.816	200	26.824	125.4	4.42	123.3	3.91	3.34	3.27	1470.
225*	4.25	33.839	224	26.862	122.1	4.24	119.7	4.22	4.01	2.88	1470.
227	4.24	33.840	225	26.864	121.8	4.22	119.5	4.24	4.06	2.85	1470.
250*	4.18	33.867	249	26.893	119.3	4.16	116.8	4.52	4.74	2.55	1470.
272	4.12	33.891	270	26.917	117.2	4.10	114.4	4.78	5.43	2.29	1470.
300*	4.06	33.927	301	26.952	114.0	4.04	111.1	5.11	6.37	2.07	1471.
365	3.95	34.000	362	27.021	108.0	3.92	104.5	5.83	8.81	1.63	1471.
400*	3.88	34.041	399	27.061	104.5	3.85	100.7	6.20	10.27	1.39	1472.
461	3.78	34.104	457	27.121	99.2	3.75	95.0	6.82	12.98	1.03	1472.
500*	3.72	34.134	498	27.151	96.6	3.68	92.1	7.20	14.86	0.96	1473.
560	3.63	34.176	555	27.193	93.1	3.59	88.0	7.77	17.91	0.87	1473.
600*	3.55	34.198	598	27.218	90.8	3.51	85.7	8.14	20.10	0.80	1474.
694	3.39	34.245	688	27.271	86.4	3.34	80.6	8.98	25.02	0.66	1475.
700*	3.38	34.249	694	27.275	85.9	3.33	80.2	9.03	25.98	0.66	1475.
800*	3.20	34.306	797	27.338	80.5	3.14	74.2	9.86	32.32	0.64	1476.
865	3.09	34.339	857	27.374	77.3	3.03	70.8	10.37	36.08	0.63	1475.
900*	3.03	34.352	894	27.390	75.9	2.97	69.2	10.64	39.09	0.63	1477.
1000*	2.88	34.388	993	27.433	72.2	2.81	65.1	11.38	46.25	0.51	1478.
1039	2.82	34.401	1029	27.448	70.9	2.75	63.7	11.66	49.16	0.51	1478.
1200*	2.62	34.451	1195	27.505	65.9	2.54	58.2	12.75	61.59	0.63	1480.
1307	2.50	34.480	1293	27.535	63.0	2.41	54.9	13.44	70.47	0.64	1481.
1500*	2.32	34.521	1500	27.587	58.8	2.22	50.3	14.62	87.29	0.75	1484.
1767	2.10	34.570	1746	27.644	54.0	1.98	44.8	16.12	112.22	0.88	1487.
2000*	1.99	34.593	1989	27.672	51.9	1.85	42.0	17.35	135.90	1.31	1491.
2242	1.88	34.615	2213	27.697	49.9	1.72	39.5	18.58	162.48	1.71	1494.
2500*	1.77	34.635	2478	27.722	48.0	1.59	37.1	19.84	193.03	2.04	1498.
2729	1.68	34.652	2691	27.742	46.3	1.48	35.1	20.92	221.76	2.31	1502.
3000*	1.62	34.666	2966	27.758	45.3	1.40	33.4	22.16	257.99	2.58	1506.
3225	1.57	34.677	3177	27.770	44.5	1.33	32.1	23.17	290.04	2.78	1510.
3500*	1.55	34.676	3454	27.771	45.0	1.23	31.8	24.40	332.07	2.99	1514.
3729	1.53	34.676	3669	27.772	45.4	1.24	31.6	25.44	370.46	3.14	1518.
3831	1.53	34.695	3768	27.788	44.3	1.22	30.0	25.89	387.97	3.16	1520.
3922	1.53	34.636	3857	27.780	45.3	1.21	30.6	26.26	402.88	3.19	1521.
3932	1.52	34.616+	3867	27.725	50.1	1.20	35.9	26.31	404.84	2.92+	1521.



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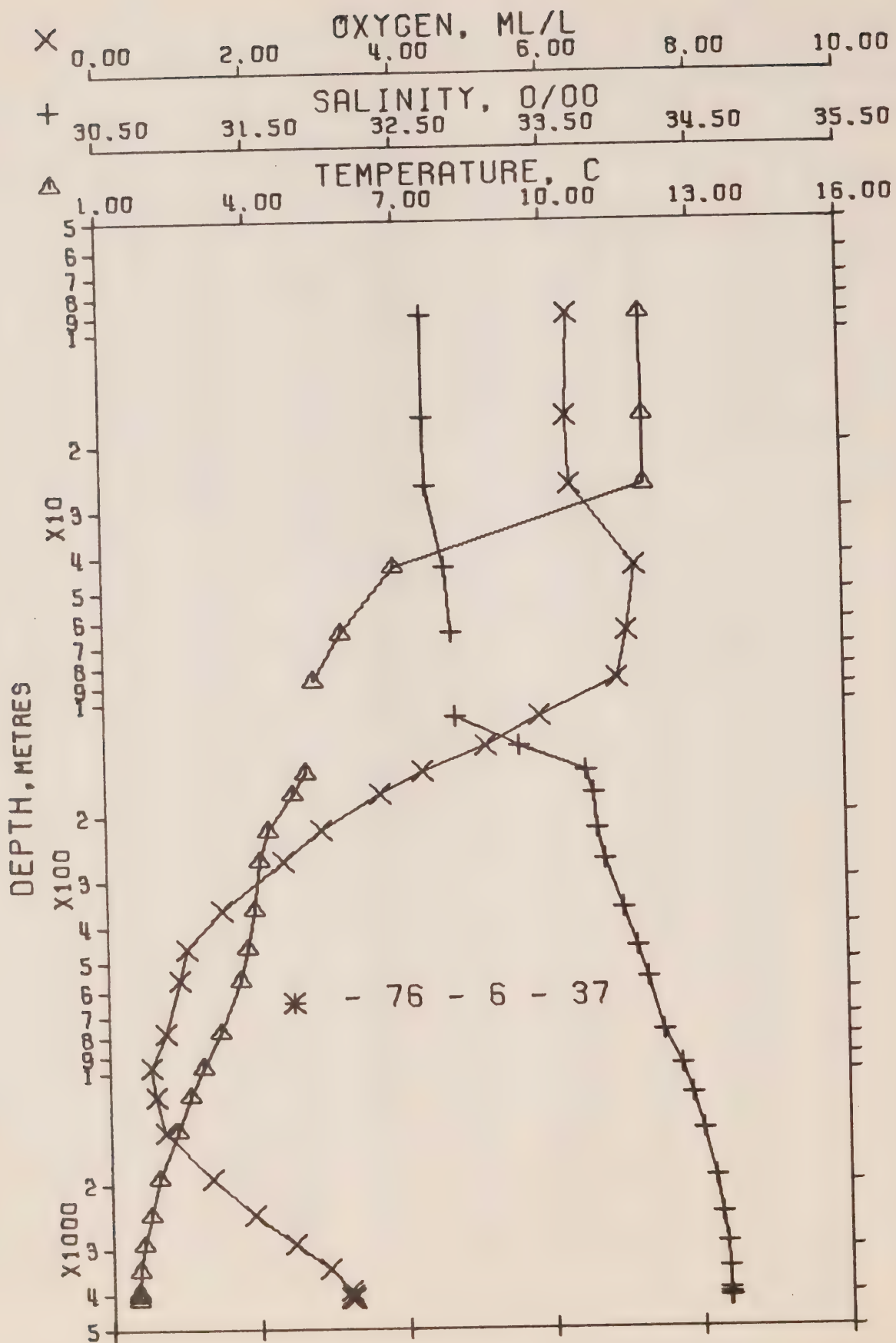
DATE 29/ 8/76 GMT 17.1

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.19	32.664	0	24.765	319.3	12.19	319.1	0.0	0.0	6.30	1495.
9	12.14	32.667	9	24.776	318.5	12.14	317.9	0.29	0.01	6.31	1495.
10*	12.12	32.668	10	24.781	318.0	12.12	317.6	0.32	0.02		1495.
18	12.00	32.671	18	24.806	315.8	12.00	315.1	0.58	0.05		1495.
20*	12.00	32.673	20	24.808	315.6	11.99	315.0	0.64	0.06		1495.
27	11.98	32.678	27	24.813	315.1	11.98	314.2	0.86	0.12	6.34	1495.
30*	10.84	32.709	30	25.045	293.3	10.84	292.3	0.95	0.15	6.49	1491.
45	6.11	32.835	45	25.855	216.2	6.11	215.3	1.32	0.29	7.12	1473.
50*	5.95	32.835	51	25.875	214.3	5.95	213.4	1.42	0.34	7.07	1473.
68	5.45	32.836	68	25.935	208.6	5.44	207.7	1.81	0.57	6.92	1471.
75*	5.32	32.854	75	25.964	206.0	5.32	204.9	1.95	0.67	6.91	1471.
92	5.05	32.894	91	26.027	200.1	5.04	198.9	2.29	0.96	6.88	1470.
100*	5.01	33.066	100	26.167	186.9	5.01	185.6	2.45	1.12	6.39	1470.
115	4.96*	33.336	114	26.387	166.2	4.95	164.8	2.71	1.40	5.64	1470.
125*	4.92	33.497	125	26.519	153.9	4.91	152.3	2.88	1.60	5.06	1471.
138	4.88	33.682	137	26.669	139.7	4.87	137.9	3.07	1.86	4.35	1471.
150*	4.79	33.731	149	26.718	135.1	4.78	133.3	3.23	2.10	4.13	1471.
162	4.71	33.777	161	26.764	131.0	4.70	129.0	3.39	2.36	3.89	1471.
175*	4.63	33.789	174	26.782	129.3	4.61	127.2	3.56	2.64	3.70	1471.
186	4.56	33.799	185	26.797	127.9	4.55	125.8	3.70	2.91	3.54	1471.
200*	4.45	33.808	200	26.817	126.2	4.44	123.9	3.88	3.25	3.34	1470.
225*	4.27	33.824	224	26.848	123.3	4.25	120.9	4.19	3.93	3.01	1470.
234	4.21	33.829	232	26.859	122.4	4.19	119.9	4.30	4.18	2.91	1470.
250*	4.16	33.845	249	26.877	120.8	4.14	118.2	4.50	4.67	2.56	1470.
283	4.06	33.874	281	26.910	117.8	4.04	115.0	4.89	5.74	2.20	1470.
300*	4.04	33.897	300	26.930	116.1	4.02	113.1	5.09	6.33	2.07	1470.
382	3.94	33.993	379	27.017	108.6	3.91	104.9	6.01	9.52	1.53	1471.
400*	3.91	34.011	399	27.034	107.1	3.88	103.3	6.20	10.30	1.43	1472.
480	3.80	34.081	476	27.101	101.3	3.77	96.9	7.04	14.04	1.03	1473.
500*	3.75	34.102	497	27.122	99.4	3.72	94.8	7.24	15.04	1.00	1473.
578	3.58	34.177	573	27.199	92.6	3.54	87.5	7.98	19.14	0.89	1473.
600*	3.53	34.189	599	27.213	91.4	3.49	86.1	8.19	20.36	0.86	1474.
700*	3.33	34.238	704	27.271	86.2	3.29	80.6	9.07	26.23	0.75	1474.
800*	3.16	34.281	795	27.322	81.9	3.11	75.7	9.91	32.66	0.66	1475.
820	3.13	34.289	812	27.331	81.1	3.07	74.9	10.07	33.97	0.64	1476.
900*	2.99	34.327	896	27.373	77.4	2.93	70.8	10.71	39.56	0.62	1476.
1000*	2.84	34.369	991	27.421	73.2	2.77	66.2	11.46	46.85	0.59	1477.
1013	2.82	34.374	1003	27.427	72.7	2.75	65.7	11.56	47.81	0.59	1478.
1200*	2.60	34.445	1189	27.503	66.1	2.52	58.5	12.85	62.43	0.66	1480.
1210	2.59	34.449	1198	27.506	65.8	2.51	58.1	12.92	63.28	0.66	1480.
1500*	2.31	34.513	1485	27.581	59.4	2.21	50.9	14.72	88.20	0.33	1484.
1512	2.30	34.515	1495	27.584	59.2	2.20	50.6	14.79	89.26	0.33	1484.
2000*	1.97	34.589	1979	27.669	52.0	1.83	42.3	17.48	137.40	1.92	1491.
2026	1.95	34.592	2001	27.673	51.6	1.81	41.9	17.62	140.15	1.97	1491.
2500*	1.76	34.633	2471	27.721	48.0	1.58	37.2	19.97	194.38	2.31	1498.
2547	1.74	34.637	2513	27.725	47.6	1.56	36.7	20.19	200.20	2.34	1499.
3000*	1.61	34.653	2962	27.748	46.2	1.39	34.4	22.30	259.37	2.38	1500.
3071	1.59	34.655	3026	27.751	45.9	1.36	34.0	22.63	270.08	2.39	1507.
3500*	1.53	34.673	3451	27.770	45.0	1.26	31.9	24.58	335.23	2.92	1514.
3591	1.52	34.677	3534	27.774	44.8	1.24	31.6	24.93	349.95	3.02	1516.
4000*	1.51	34.685	3938	27.781	45.2	1.19	30.6	26.82	421.00	3.28	1523.
4099	1.51	34.687	4030	27.783	45.3	1.18	30.4	27.27	439.57	3.34	1524.
4100*	1.51	34.687	4031	27.783	45.3	1.18	30.4	27.27	439.68	3.34	1524.
4200	1.52	34.684	4128	27.779	46.0	1.17	30.6	27.73	458.95	3.34	1526.
4288	1.53	34.679	4214	27.775	46.7	1.17	30.9	28.12	476.13	3.32	1528.
4299	1.52	34.655+	4224	27.756	48.2	1.16	32.7	28.17	478.20	3.28	1528.



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REFERENCE NO. 76- 6- 37

DATE 5/ 9/76

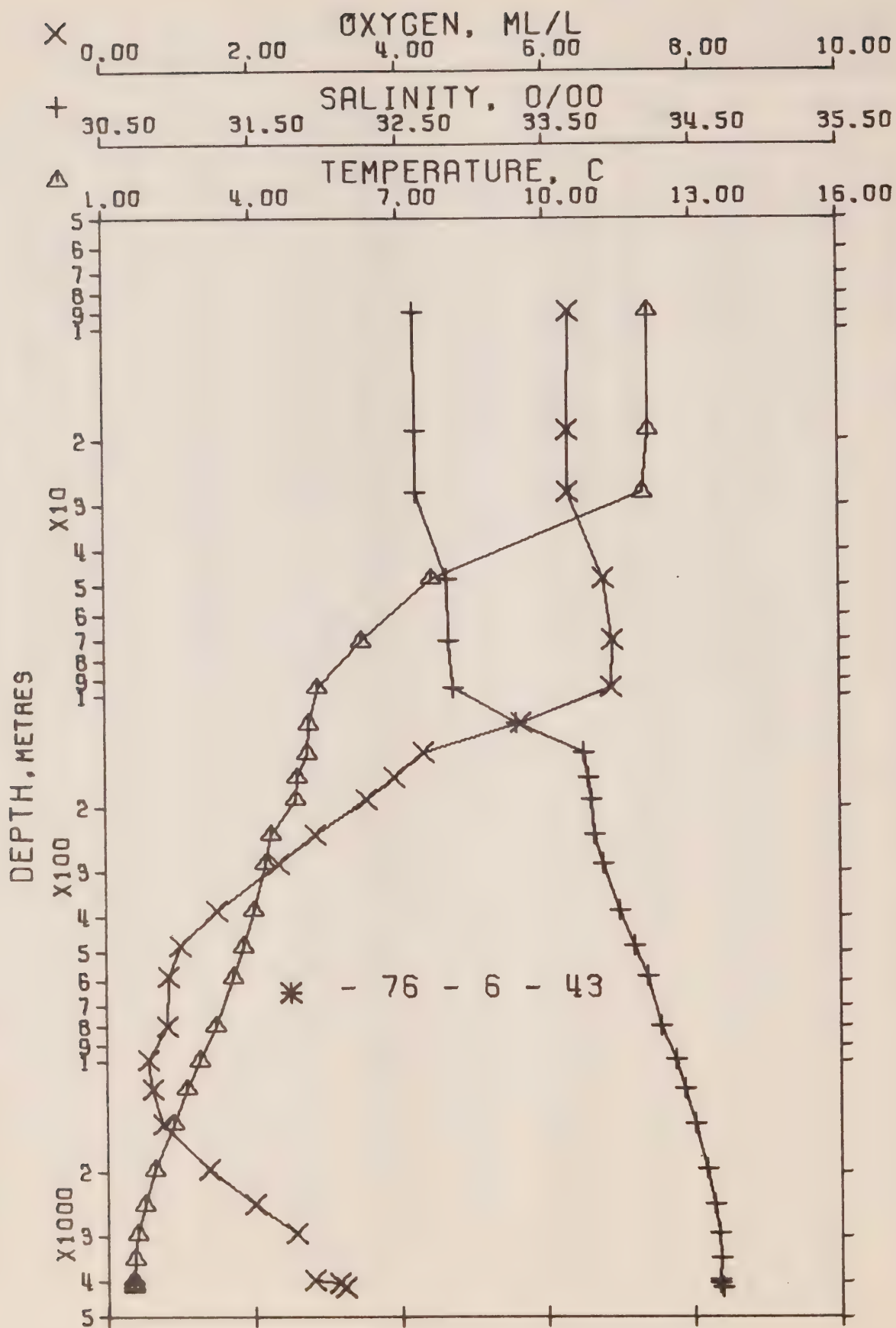
GMT 17.2

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.02	32.679	0	24.808	315.2	12.02	315.0	0.0	0.0	6.31	1495.
9	11.99	32.679	9	24.814	314.8	11.99	314.4	0.28	0.01	6.35	1495.
10*	11.99	32.679	10	24.813	314.9	11.99	314.5	0.31	0.02	6.34	1495.
17	12.01	32.676	17	24.808	315.6	12.01	315.0	0.54	0.05	6.30	1495.
20*	12.01	32.680	20	24.811	315.3	12.01	314.7	0.63	0.06	6.32	1495.
26	12.01	32.687	26	24.816	315.0	12.01	314.1	0.83	0.11	6.34	1495.
30*	10.61	32.722	31	25.095	288.5	10.61	287.6	0.94	0.14	6.58	1490.
43	6.87	32.815	43	25.741	227.0	6.87	226.1	1.27	0.27	7.21	1476.
50*	6.50	32.826	51	25.799	221.6	6.49	220.7	1.43	0.34	7.16	1475.
65	5.81	32.847	65	25.901	211.9	5.80	210.9	1.76	0.53	7.08	1473.
75*	5.53	32.854	75	25.940	208.4	5.53	207.5	1.96	0.66	7.02	1472.
88	5.22	32.862*	87	25.982	204.4	5.21	203.2	2.22	0.99	6.95	1470.
100*	5.18	32.868	100	25.992	203.6	5.18	202.3	2.47	1.14	6.32	1471.
110	5.16*	32.873	109	25.998	203.0	5.15	201.7	2.67	1.35	5.88	1471.
125*	5.12	33.178	125	26.244	179.9	5.11	178.4	2.97	1.70	5.36	1471.
132	5.11	33.303	131	26.344	170.5	5.10	168.8	3.09	1.86	5.15	1471.
150*	5.07	33.662	149	26.532	143.4	5.06	141.5	3.37	2.27	4.46	1472.
155	5.06	33.754	154	26.706	136.4	5.05	134.5	3.44	2.38	4.23	1472.
175*	4.81	33.798	174	26.770	130.5	4.79	126.4	3.70	2.82	3.76	1471.
177	4.78	33.803	176	26.776	129.9	4.77	127.8	3.73	2.87	3.70	1471.
200*	4.51	33.814	200	26.815	126.4	4.49	124.1	4.02	3.43	3.23	1471.
223	4.27	33.824	221	26.848	123.3	4.25	120.9	4.30	4.04	2.90	1470.
225*	4.26	33.827	224	26.852	123.0	4.24	120.7	4.33	4.10	2.33	1470.
250*	4.16	33.855	249	26.884	120.1	4.14	117.5	4.64	4.64	2.59	1470.
269	4.09	33.874	267	26.907	118.1	4.07	115.4	4.85	5.44	2.33	1470.
300*	4.05	33.914	301	26.943	114.8	4.03	111.9	5.23	6.48	2.08	1470.
364	3.97	33.986	361	27.008	109.3	3.94	105.7	5.94	8.90	1.54	1471.
400*	3.91	34.023	400	27.043	106.1	3.88	102.3	6.33	10.42	1.35	1472.
463	3.82	34.080	459	27.098	101.4	3.79	97.1	6.93	13.28	1.05	1472.
500*	3.76	34.107	498	27.125	99.1	3.72	94.5	7.35	15.11	1.02	1473.
566	3.66	34.149	561	27.169	95.4	3.62	90.4	7.99	18.58	0.77	1474.
600*	3.58	34.167	600	27.190	93.5	3.54	88.3	8.32	20.50	0.73	1474.
700*	3.38	34.213	702	27.247	88.6	3.34	82.9	9.23	26.53	0.33	1475.
782	3.24	34.247	775	27.287	85.2	3.19	79.1	9.94	31.93	0.76	1475.
800*	3.20	34.260	795	27.301	83.9	3.15	77.7	10.09	33.16	0.74	1476.
900*	3.01	34.328	896	27.373	77.5	2.95	70.8	10.90	40.14	0.63	1476.
971	2.89	34.372	962	27.419	73.4	2.82	66.5	11.43	45.25	0.57	1477.
1000*	2.85	34.383	993	27.431	72.3	2.78	65.2	11.64	47.35	0.53	1478.
1163	2.63	34.440	1151	27.496	66.6	2.55	59.1	12.77	59.78	0.61	1479.
1200*	2.59	34.450	1192	27.507	65.6	2.51	58.0	13.02	62.74	0.63	1480.
1456	2.34	34.509	1440	27.576	59.8	2.24	51.4	14.61	84.35	0.75	1483.
1500*	2.30	34.517	1490	27.585	59.1	2.20	50.5	14.88	88.31	0.31	1484.
1953	1.97	34.586	1929	27.667	52.1	1.84	42.6	17.37	132.22	1.36	1490.
2000*	1.95	34.590	1981	27.672	51.6	1.81	42.0	17.62	137.18	1.42	1491.
2460	1.79	34.627	2427	27.714	48.7	1.61	37.9	19.92	189.54	1.33	1498.
2500*	1.78	34.630	2470	27.717	48.4	1.60	37.5	20.12	194.49	1.97	1493.
2972	1.62	34.659	2929	27.752	45.7	1.40	34.0	22.32	255.98	2.45	1506.
3000*	1.62	34.660	2959	27.753	45.7	1.39	33.8	22.45	259.89	2.49	1506.
3488	1.54	34.674	3434	27.770	45.1	1.27	31.9	24.68	333.68	2.92	1514.
3500*	1.54	34.674	3446	27.770	45.0	1.27	31.9	24.74	335.54	2.93	1514.
4000*	1.52	34.674	3933	27.771	46.1	1.20	31.5	25.98	421.55	3.20	1523.
4003	1.52	34.674	3936	27.771	46.1	1.20	31.5	27.00	422.10	3.20	1523.
4100*	1.52	34.670	4031	27.768	46.6	1.19	31.6	27.45	440.70	3.22	1524.
4106	1.52	34.670	4036	27.768	46.6	1.13	31.7	27.47	441.79	3.23	1525.
4198	1.52	34.683	4126	27.779	46.0	1.17	30.6	27.89	459.47	3.25	1526.
4200*	1.52	34.681	4128	27.777	46.1	1.17	30.8	27.90	459.88	3.24	1526.
4208	1.52	34.671+	4130	27.769	46.9	1.17	31.6	27.94	461.52	3.21	1526.



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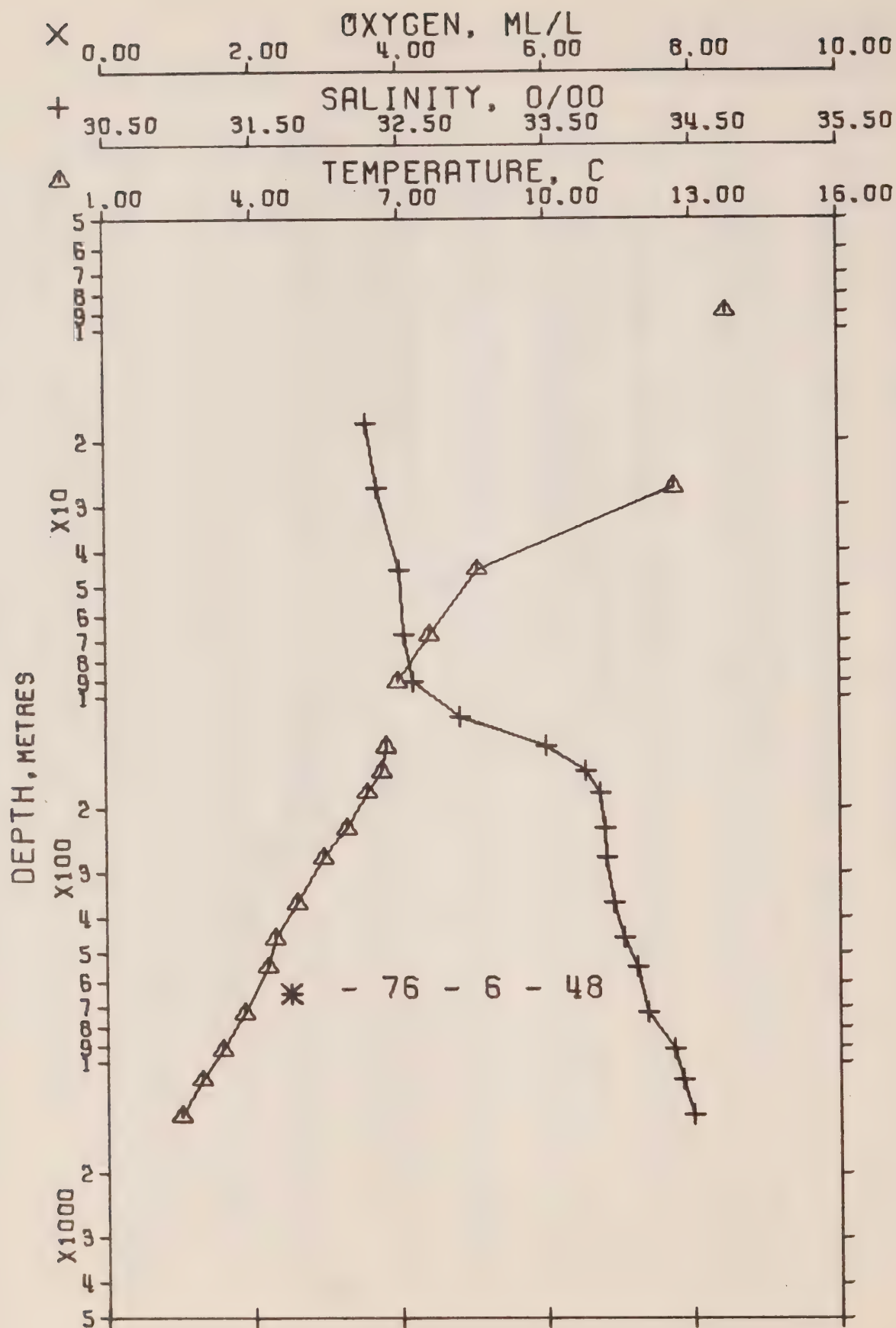
DATE 11/ 9/76 GMT 17.2

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.17	32.615	0	24.731	322.6	12.17	322.4	0.0	0.0	6.16	1495.
9	12.12	32.614	9	24.739	322.0	12.12	321.5	0.29	0.01	6.35	1495.
10*	12.12	32.615	10	24.740	321.9	12.12	321.5	0.32	0.02	6.35	1495.
19	12.12	32.618	19	24.742	321.9	12.12	321.2	0.62	0.06	6.32	1495.
20*	12.11	32.618	20	24.745	321.7	12.11	320.9	0.64	0.07	6.32	1495.
28	12.02	32.620	28	24.763	320.1	12.02	319.2	0.91	0.13	6.32	1495.
30*	11.51	32.644	30	24.876	309.4	11.50	308.5	0.97	0.15	6.33	1493.
48	7.65	32.827	48	25.644	236.4	7.65	235.5	1.45	0.34	6.79	1480.
50*	7.52	32.828	50	25.663	234.6	7.52	233.7	1.49	0.36	6.80	1479.
71	6.23	32.840	71	25.844	217.5	6.22	216.3	1.97	0.66	6.92	1474.
75*	6.08	32.846	75	25.868	215.3	6.07	214.1	2.05	0.72	6.92	1474.
96	5.31	32.875	95	25.982	204.5	5.30	203.2	2.43	1.10	6.90	1471.
100*	5.28	32.961	100	26.054	197.7	5.27	196.4	2.57	1.18	6.65	1471.
120	5.14	33.305	119	26.342	170.6	5.13	169.1	2.94	1.59	5.66	1471.
125*	5.13	33.412	125	26.427	162.6	5.12	160.9	3.02	1.70	5.34	1471.
144	5.10	33.763	143	26.709	136.2	5.09	134.2	3.30	2.08	4.31	1472.
150*	5.04	33.770	149	26.720	135.0	5.03	133.1	3.38	2.20	4.21	1472.
168	4.89	33.788	167	26.752	132.2	4.88	130.1	3.63	2.60	3.93	1472.
175*	4.89	33.795	174	26.758	131.7	4.87	129.5	3.72	2.76	3.81	1472.
192	4.88	33.810	191	26.771	130.6	4.87	128.3	3.94	3.18	3.53	1472.
200*	4.79	33.813	199	26.784	129.5	4.77	127.1	4.04	3.38	3.41	1472.
225*	4.51	33.824	225	26.823	125.9	4.49	123.4	4.36	4.07	3.05	1471.
241	4.35	33.830	239	26.845	123.9	4.33	121.3	4.50	4.54	2.84	1471.
250*	4.33	33.843	249	26.858	122.7	4.31	120.0	4.67	4.82	2.74	1471.
289	4.23	33.894	287	26.908	118.2	4.21	115.2	5.15	6.12	2.34	1471.
300*	4.20	33.908	299	26.922	117.0	4.18	113.9	5.27	6.50	2.24	1471.
388	4.00	34.004	385	27.019	108.4	3.97	104.6	6.26	9.98	1.51	1472.
400*	3.97	34.017	398	27.032	107.2	3.94	103.4	6.39	10.50	1.44	1472.
488	3.79	34.100	484	27.117	99.9	3.76	95.3	7.30	14.62	0.99	1473.
500*	3.76	34.111	497	27.129	98.8	3.73	94.2	7.42	15.22	0.97	1473.
590	3.58	34.189	585	27.208	91.8	3.54	86.6	8.28	19.97	0.84	1474.
600*	3.56	34.194	596	27.214	91.2	3.52	86.0	8.37	20.52	0.84	1474.
700*	3.38	34.242	702	27.270	36.5	3.33	80.7	9.26	20.40	0.33	1475.
800*	3.22	34.283	793	27.318	82.4	3.16	76.1	10.10	32.86	0.31	1476.
805	3.21	34.285	798	27.320	82.2	3.15	75.9	10.14	33.21	0.31	1476.
900*	3.05	34.334	897	27.374	77.5	2.99	70.8	10.90	39.78	0.69	1477.
1000*	2.90	34.380	991	27.424	73.1	2.83	66.0	11.65	47.08	0.57	1478.
1002	2.90	34.381	992	27.425	73.0	2.83	65.9	11.67	47.20	0.56	1478.
1199	2.63	34.442	1187	27.497	66.6	2.55	58.9	13.02	62.44	0.62	1480.
1200*	2.63	34.442	1188	27.498	66.6	2.55	58.9	13.03	62.50	0.62	1480.
1497	2.35	34.507	1481	27.573	60.3	2.25	51.6	14.94	88.81	0.77	1484.
1500*	2.35	34.507	1484	27.574	60.2	2.25	51.6	14.96	89.05	0.77	1484.
1999	1.95	34.592	1975	27.673	51.5	1.81	41.9	17.59	135.87	1.38	1491.
2000*	1.95	34.592	1976	27.673	51.6	1.81	41.9	17.60	135.94	1.38	1491.
2500*	1.74	34.637	2467	27.725	47.5	1.56	36.8	20.19	195.24	1.99	1498.
2504	1.74	34.637	2471	27.725	47.4	1.56	36.7	20.21	195.78	2.00	1498.
3000*	1.59	34.668	2958	27.761	44.8	1.37	33.1	22.44	258.28	2.55	1506.
3013	1.59	34.669	2969	27.762	44.8	1.37	33.0	22.49	260.03	2.56	1506.
3500*	1.53	34.679	3447	27.774	44.6	1.26	31.6	24.67	332.23		1514.
3520	1.53	34.679	3465	27.775	44.7	1.26	31.5	24.76	335.45		1515.
4000*	1.52	34.672	3935	27.770	46.2	1.20	31.6	26.93	418.55		1523.
4026	1.52	34.672	3958	27.770	46.4	1.19	31.6	27.04	423.38	2.30	1523.
4100*	1.51	34.673	4031	27.771	46.4	1.18	31.5	27.39	437.70	3.05	1524.
4126	1.51	34.673	4056	27.771	46.3	1.17	31.4	27.51	442.77	3.13	1525.
4200*	1.52	34.685	4128	27.780	45.9	1.17	30.5	27.85	457.24		1526.
4217	1.52	34.688 *	4145	27.782	45.8	1.17	30.3	27.93	460.68		1527.
4227	1.52	34.689	4154	27.783	45.6	1.17	30.2	27.97	462.50	3.21	1527.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 48

DATE 14/ 9/76

GMT 16.4

POSITION 49- 2.0 N, 130-40.0 W

STATION 6

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	JOY	SOUND
0	13.74	32.277	0	24.162	376.7	13.74	376.5	0.0	0.0		1500.
9	13.72	32.278*	9	24.167	376.5	13.72	376.0	0.34	0.02		1500.
10*	13.63	32.278	10	24.186	374.7	13.62	374.2	0.38	0.02		1500.
18	13.05 *	32.278	18	24.300	364.0	13.05	363.3	0.68	0.06		1498.
20*	12.95	32.297	20	24.334	360.8	12.95	360.0	0.75	0.08		1498.
27	12.65	32.355	27	24.438	351.0	12.65	350.2	1.00	0.14		1497.
30*	11.86	32.383	31	24.609	334.8	11.85	333.8	1.10	0.17		1494.
45	8.60	32.496	45	25.245	274.3	8.60	273.3	1.55	0.34		1483.
50*	8.36	32.504	51	25.288	270.3	8.35	269.2	1.68	0.40		1482.
68	7.59	32.529	68	25.418	258.1	7.58	256.8	2.17	0.69		1479.
75*	7.38	32.549	75	25.463	253.9	7.37	252.5	2.34	0.82		1479.
92	6.93	32.593	91	25.559	244.9	6.92	243.4	2.75	1.17		1477.
100*	6.88	32.717	100	25.663	235.2	6.87	233.6	2.95	1.37		1477.
115	6.80	32.908	114	25.824	220.1	6.79	218.2	3.29	1.74		1477.
125*	6.75	33.185	125	26.048	198.9	6.74	196.9	3.51	2.00		1478.
138	6.69 *	33.498	137	26.302	175.0	6.68	172.8	3.74	2.32		1478.
150*	6.65	33.646	150	26.425	163.6	6.63	161.1	3.95	2.62		1478.
161	6.61	33.770	160	26.527	154.0	6.60	151.4	4.12	2.90		1479.
175*	6.42	33.831	174	26.600	147.3	6.41	144.4	4.33	3.26		1478.
184	6.31	33.869	183	26.644	143.2	6.29	140.3	4.47	3.50		1478.
200*	6.16	33.880	200	26.672	140.7	6.14	137.6	4.69	3.94		1477.
225*	5.94	33.896	224	26.712	137.1	5.93	133.8	5.04	4.69		1477.
231	5.90	33.899	229	26.720	136.3	5.88	133.0	5.11	4.87		1477.
250*	5.68	33.902	249	26.749	133.8	5.66	130.2	5.38	5.51		1476.
277	5.41	33.906	275	26.785	130.5	5.39	126.8	5.73	6.47		1476.
300*	5.26	33.922	300	26.816	127.8	5.23	123.9	6.03	7.34		1476.
370	4.86	33.965	367	26.896	120.6	4.83	118.3	6.90	10.30		1475.
400*	4.70	33.989	399	26.933	117.4	4.67	112.8	7.26	11.71		1475.
462	4.42	34.034	458	26.999	111.4	4.38	106.5	7.96	14.80		1475.
500*	4.35	34.072	498	27.037	108.1	4.31	102.8	8.38	16.87		1475.
552	4.26	34.120	548	27.084	104.1	4.22	98.3	8.94	19.85		1476.
600*	4.13	34.140	600	27.114	101.4	4.08	95.4	9.43	22.72		1476.
700*	3.88	34.179	698	27.170	96.7	3.83	90.1	10.41	29.27		1477.
738	3.80	34.192	732	27.189	95.1	3.75	88.3	10.78	31.98		1477.
800*	3.64	34.254	798	27.254	89.2	3.58	82.1	11.35	36.44		1477.
900*	3.41	34.345	894	27.349	80.0	3.35	73.1	12.20	43.78		1478.
928	3.35	34.368	919	27.373	78.4	3.28	70.8	12.42	45.82		1478.
1000*	3.18	34.394	995	27.410	75.1	3.11	67.2	12.97	51.27		1479.
1124	2.92	34.435	1113	27.466	70.0	2.84	61.9	13.87	60.98		1480.
1200*	2.80	34.454	1194	27.492	67.7	2.72	59.5	14.39	67.17		1481.
1408	2.51	34.499	1393	27.553	62.3	2.41	53.5	15.74	85.01		1483.
1417	2.51	34.501	1402	27.555	62.1	2.41	53.3	15.79	85.83		1483.

Results of STP Observations

(P-76-6)

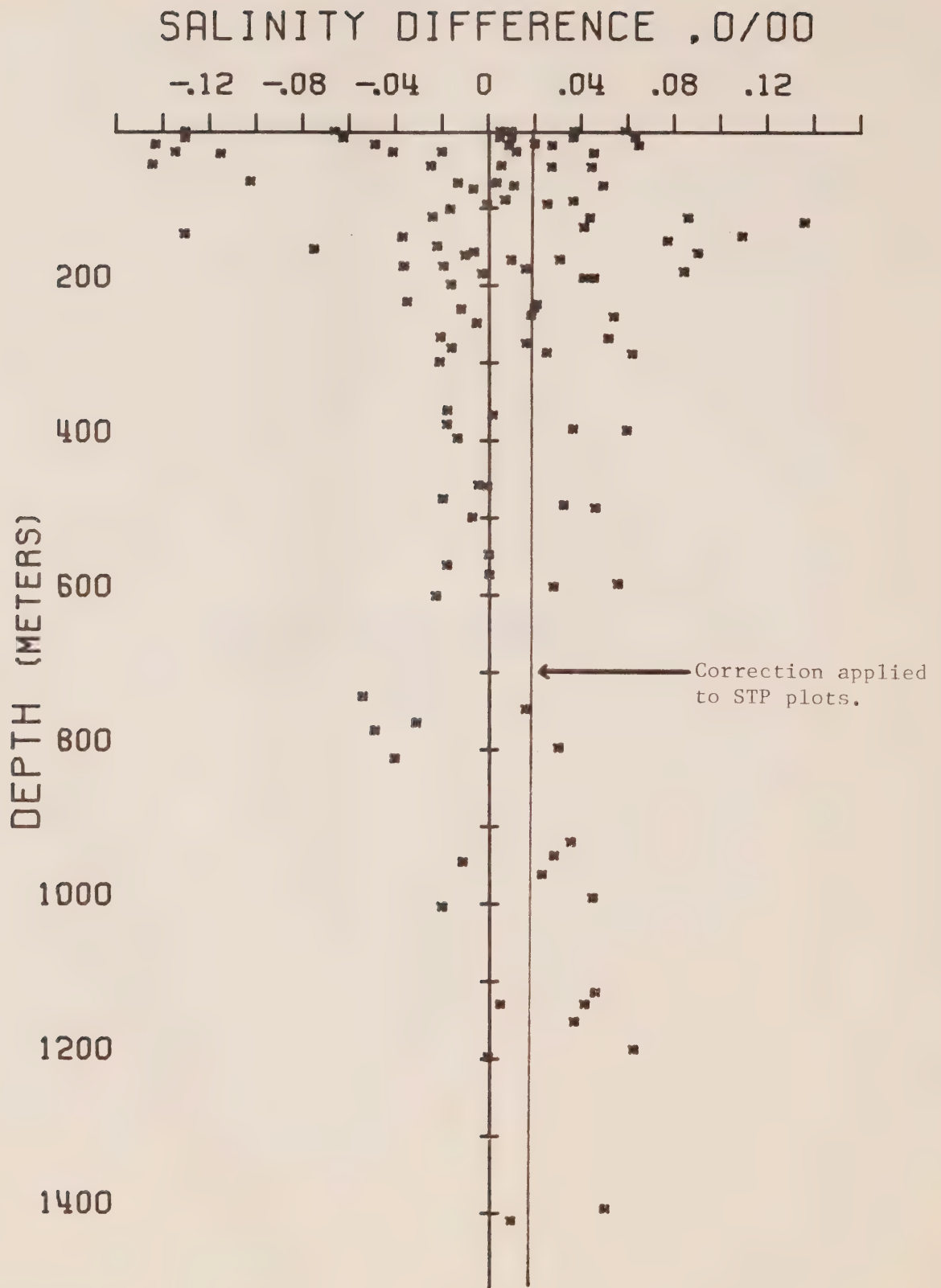


Figure 7. Salinity difference between hydro data and STP. P-76-6

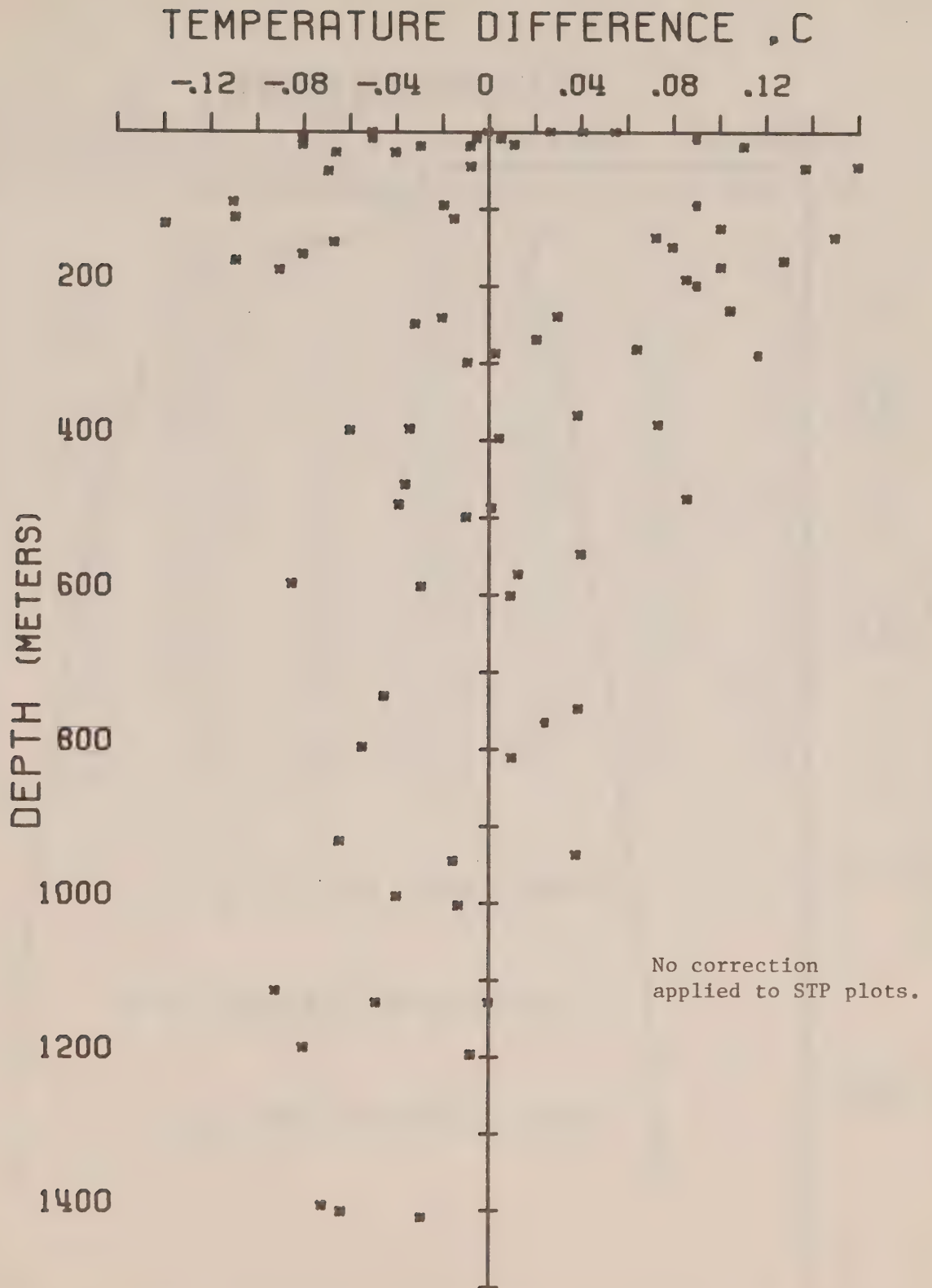
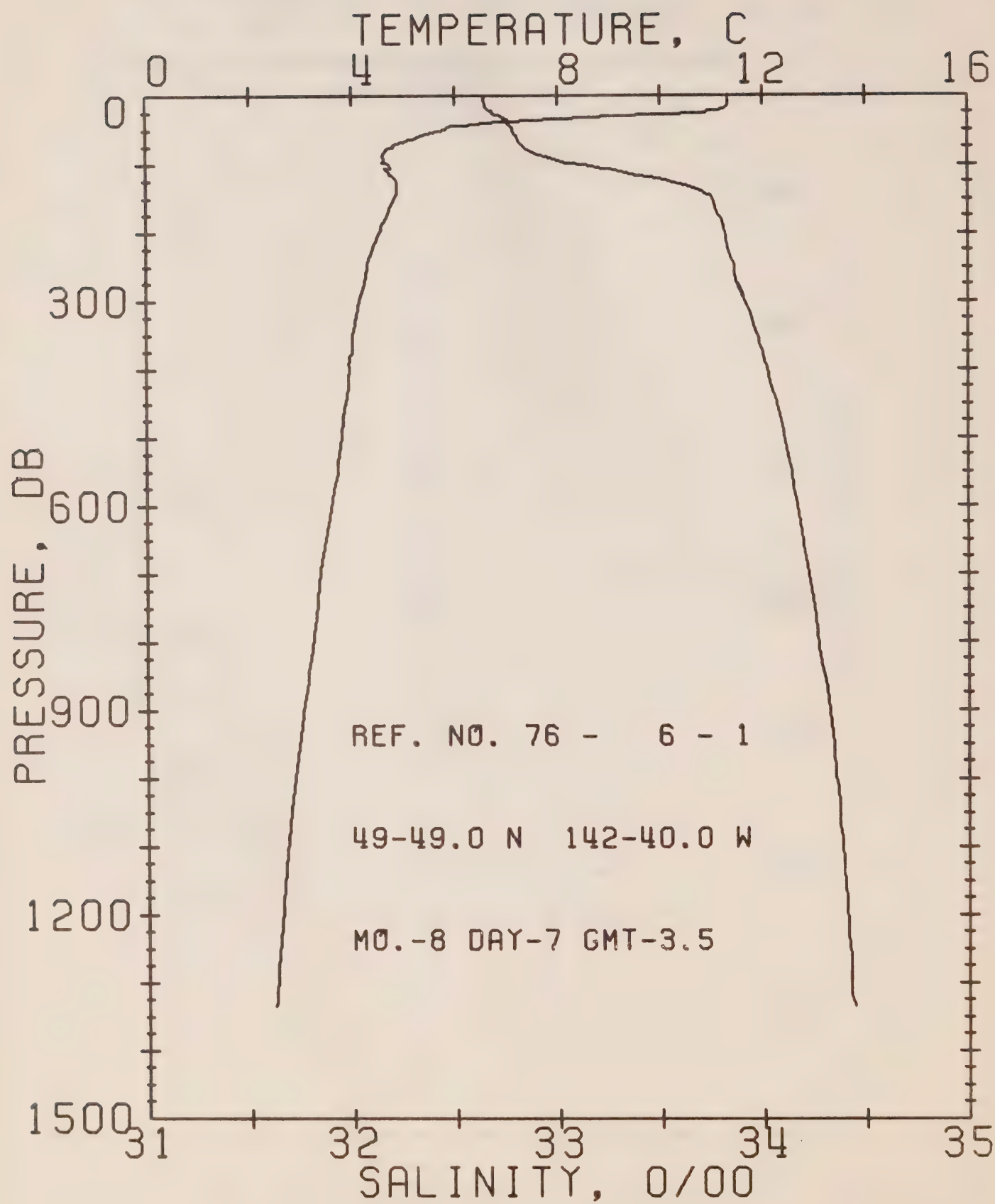


Figure 8. Temperature difference between hydro data and STP. P-76-6.



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REFERENCE NO. 76- 6- 1

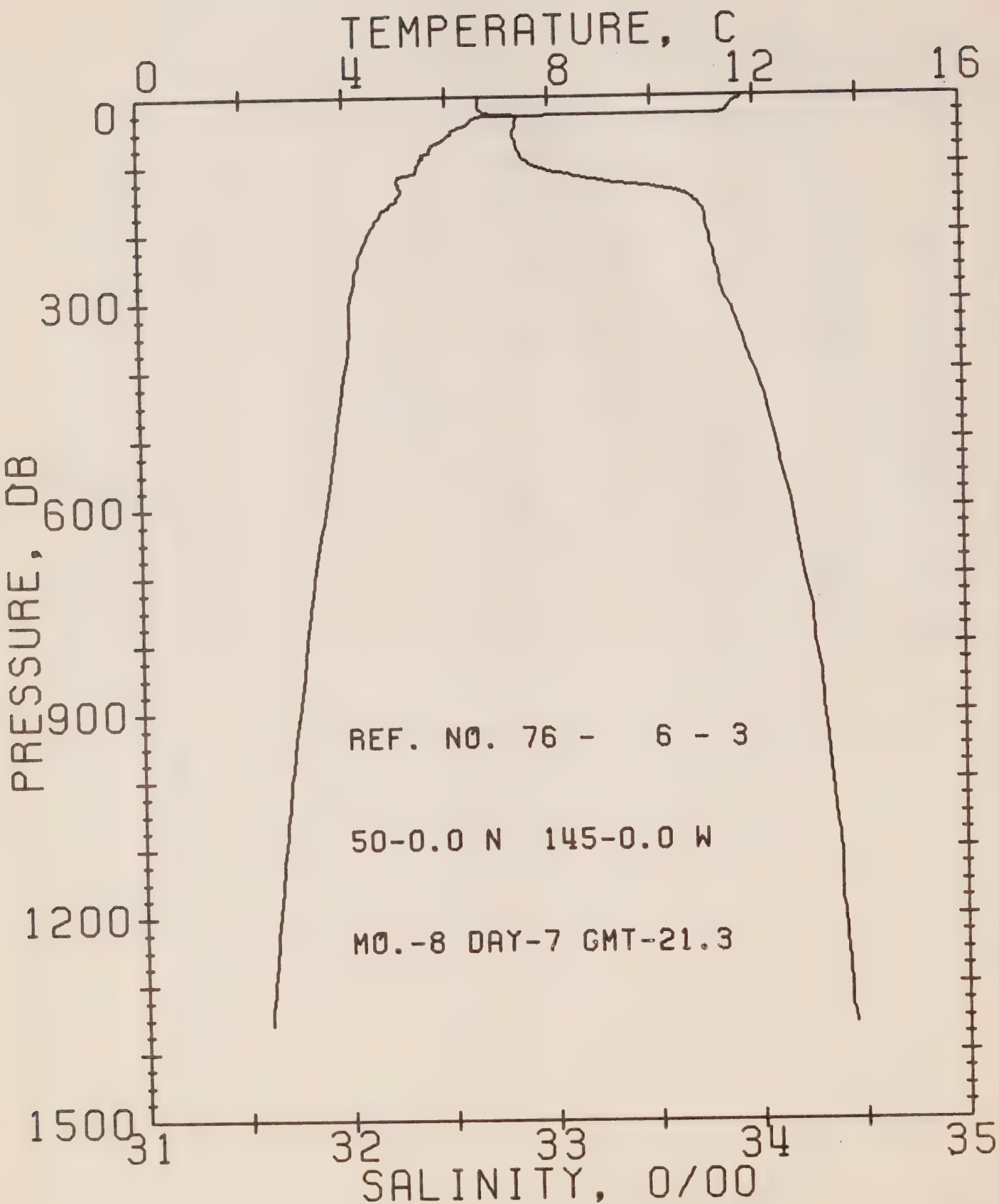
DATE 7/ 8/76

STATION 12

POSITION 49-49.0N, 142-40.0W GMT 3.5

RESULTS OF STP CAST 142 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.33	32.64	0	24.90	305.8	0.0	0.0	1492.
10	11.33	32.64	10	24.90	306.2	0.31	0.02	1492.
20	11.25	32.66	20	24.93	303.6	0.61	0.06	1492.
30	9.55	32.72	30	25.27	271.7	0.90	0.14	1486.
50	5.81	32.78	50	25.85	216.7	1.37	0.33	1472.
75	4.79	32.84	75	26.01	201.3	1.89	0.66	1468.
100	4.67	33.10	99	26.23	180.5	2.37	1.09	1469.
125	4.87	33.55	124	26.57	149.2	2.78	1.55	1471.
150	4.83	33.75	149	26.73	134.1	3.13	2.04	1471.
175	4.67	33.78	174	26.77	130.2	3.46	2.59	1471.
200	4.52	33.81	199	26.81	126.4	3.78	3.20	1471.
225	4.39	33.83	223	26.84	124.0	4.10	3.88	1471.
250	4.29	33.86	248	26.87	121.0	4.40	4.62	1471.
300	4.12	33.91	298	26.93	115.9	5.00	6.29	1471.
400	3.95	34.02	397	27.04	106.7	6.11	10.24	1472.
500	3.78	34.10	496	27.12	99.7	7.14	14.96	1473.
600	3.59	34.17	595	27.19	93.7	8.11	20.37	1474.
800	3.21	34.27	793	27.30	83.6	9.87	32.92	1476.
1000	2.86	34.35	990	27.41	74.7	11.44	47.31	1478.
1200	2.60	34.40	1188	27.47	69.0	12.87	63.32	1480.



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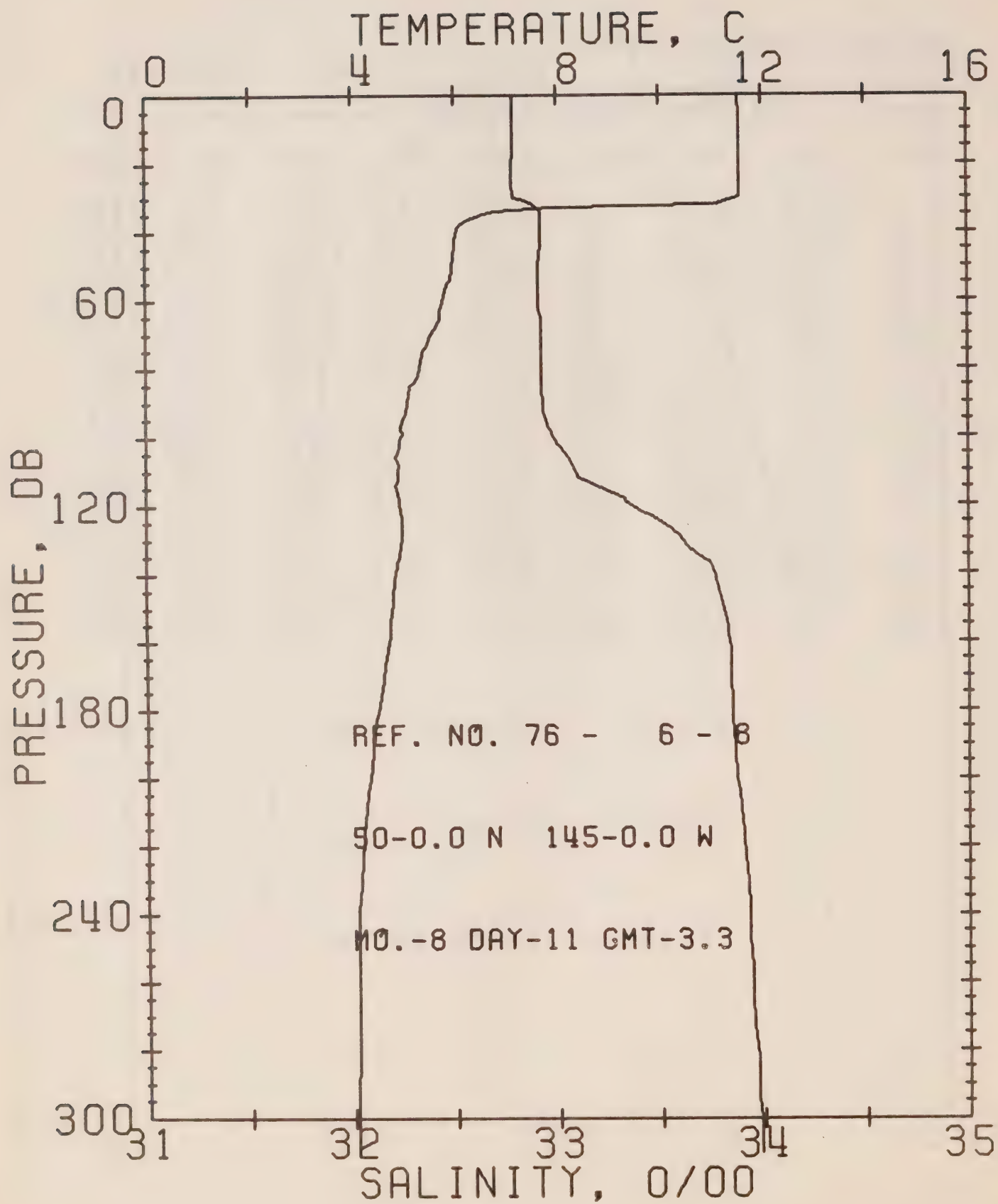
DATE 7/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.3

RESULTS OF STP CAST 164 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.75	32.66	0	24.84	311.6	0.0	0.0	1494.
10	11.63	32.66	10	24.87	309.9	0.31	0.02	1493.
20	11.49	32.67	20	24.90	307.2	0.62	0.06	1493.
30	6.59	32.85	30	25.81	220.7	0.90	0.13	1475.
50	6.11	32.83	50	25.85	216.6	1.33	0.31	1473.
75	5.71	32.85	75	25.92	210.7	1.87	0.65	1472.
100	5.45	32.92	99	26.00	202.5	2.39	1.11	1472.
125	5.04	33.32	124	26.36	168.4	2.86	1.65	1471.
150	5.04	33.70	149	26.67	139.9	3.23	2.18	1472.
175	4.67	33.76	174	26.75	131.9	3.57	2.74	1471.
200	4.47	33.77	199	26.79	128.9	3.90	3.36	1470.
225	4.32	33.79	223	26.82	126.1	4.22	4.05	1470.
250	4.24	33.81	248	26.84	124.2	4.53	4.81	1470.
300	4.08	33.89	298	26.92	117.2	5.14	6.51	1471.
400	3.97	33.99	397	27.01	109.2	6.28	10.58	1472.
500	3.77	34.09	496	27.11	100.7	7.33	15.36	1473.
600	3.57	34.16	595	27.19	93.6	8.30	20.81	1474.
800	3.18	34.27	793	27.31	82.8	10.05	33.27	1475.
1000	2.84	34.35	990	27.41	74.7	11.62	47.63	1477.
1200	2.58	34.40	1188	27.47	69.2	13.05	63.68	1480.



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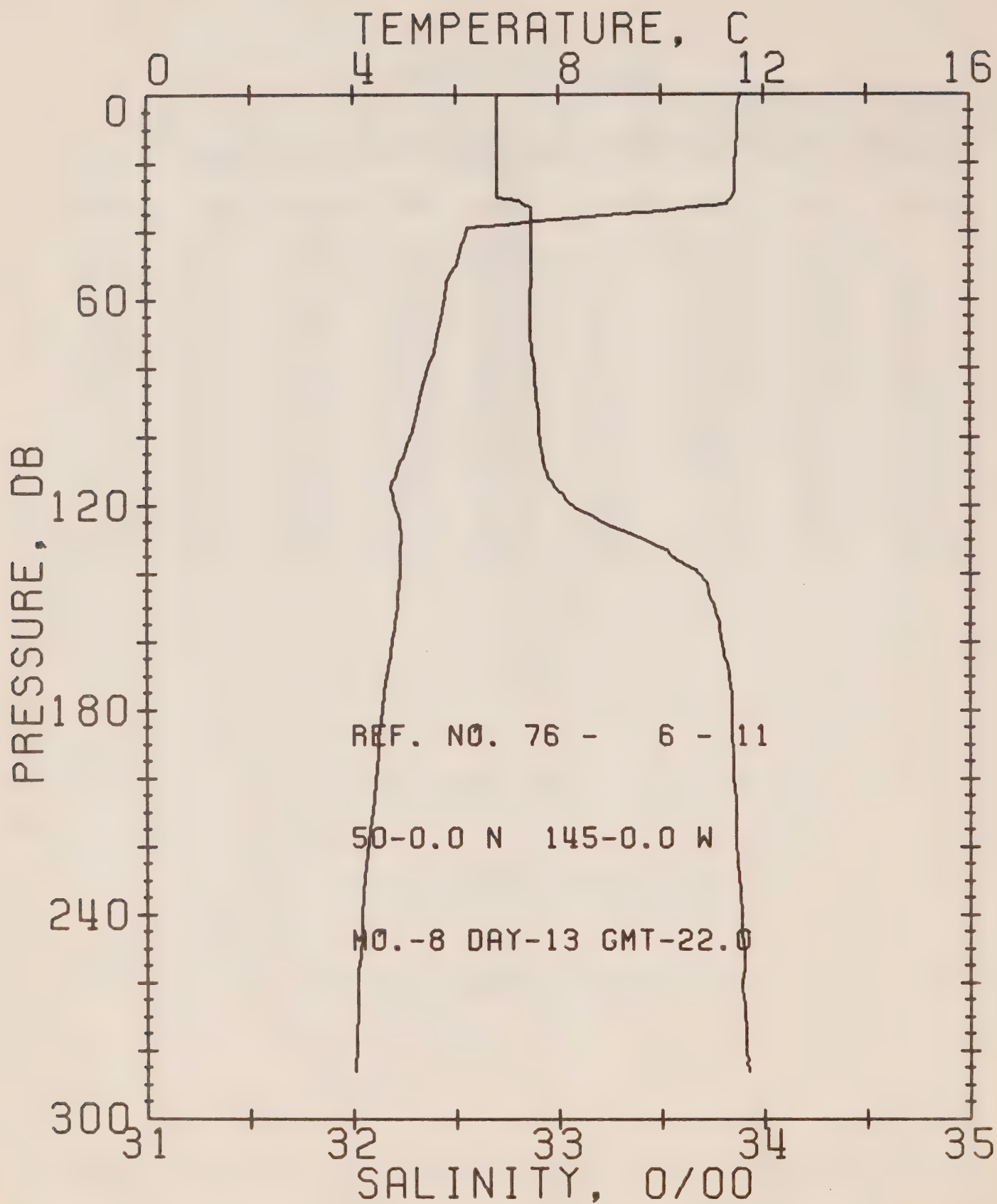
DATE 11/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 3.3

RESULTS OF STP CAST 103 PCINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.55	32.79	0	24.98	298.5	0.0	0.0	1493.
10	11.56	32.79	10	24.98	299.1	0.30	0.02	1493.
20	11.58	32.78	20	24.97	300.1	0.60	0.06	1494.
30	11.57	32.79	30	24.98	299.7	0.90	0.14	1494.
50	5.96	32.91	50	25.93	208.8	1.34	0.32	1473.
75	5.37	32.92	75	26.01	201.6	1.86	0.64	1471.
100	4.95	32.97	99	26.10	193.1	2.35	1.08	1470.
125	4.96	33.51	124	26.52	153.3	2.79	1.59	1471.
150	4.76	33.80	149	26.78	129.3	3.14	2.07	1471.
175	4.55	33.85	174	26.84	124.2	3.45	2.59	1470.
200	4.31	33.87	199	26.88	120.1	3.76	3.18	1470.
225	4.15	33.91	223	26.93	115.4	4.05	3.81	1470.
250	4.08	33.93	248	26.96	113.3	4.34	4.50	1470.
300	4.06	33.98	298	26.99	110.1	4.90	6.07	1471.



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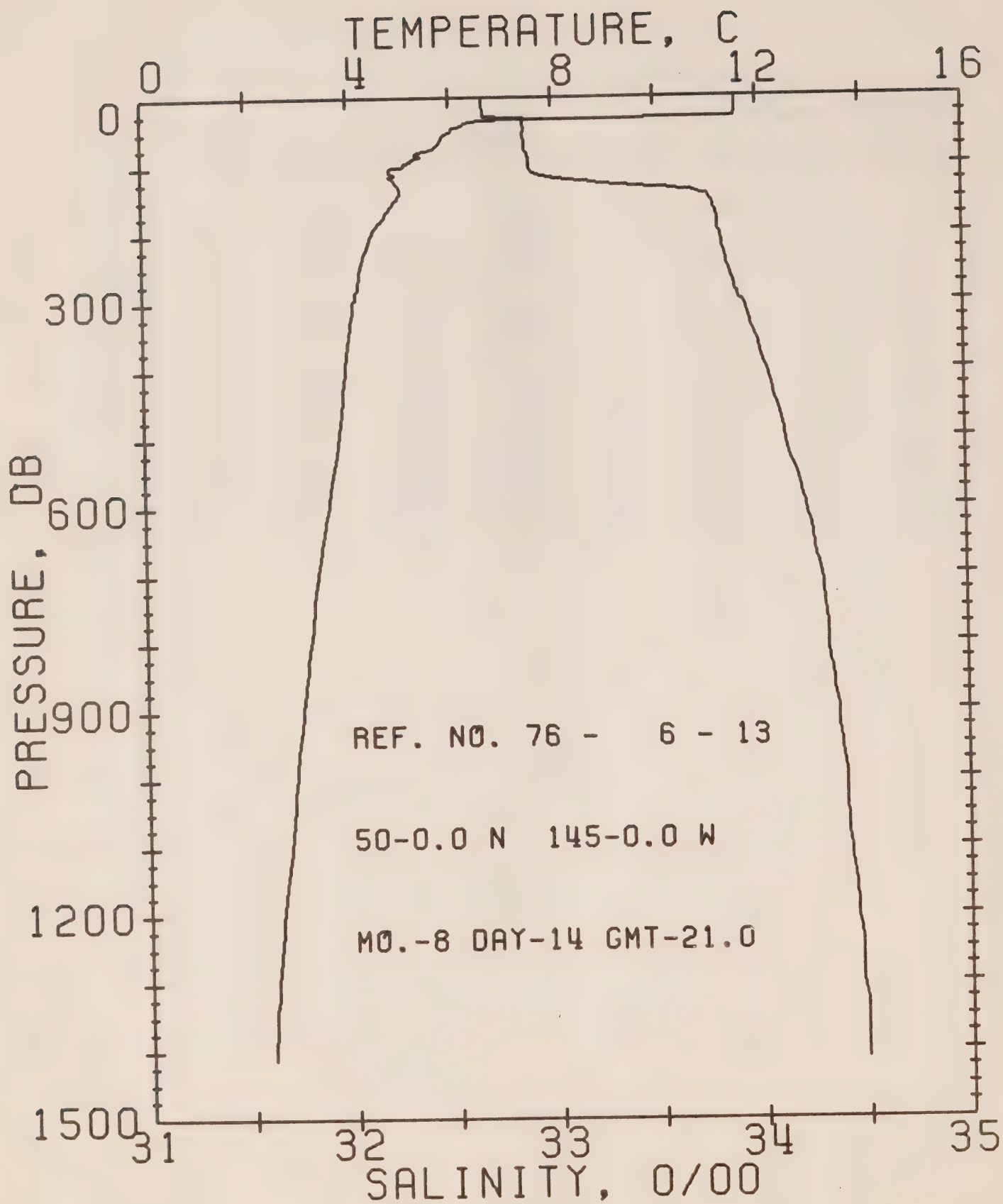
DATE 13/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 22.0

RESULTS OF STP CAST 104 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.54	32.70	0	24.91	305.0	0.0	0.0	1493.
10	11.48	32.70	10	24.92	304.4	0.30	0.02	1493.
20	11.45	32.70	20	24.93	304.2	0.61	0.06	1493.
30	11.39	32.70	30	24.94	303.3	0.91	0.14	1493.
50	5.99	32.87	50	25.90	212.1	1.38	0.33	1473.
75	5.56	32.87	75	25.95	207.5	1.91	0.66	1472.
100	5.09	32.90	99	26.03	199.8	2.42	1.11	1470.
125	4.91	33.22	124	26.30	174.5	2.89	1.66	1470.
150	4.85	33.75	149	26.73	134.1	3.26	2.18	1471.
175	4.60	33.84	174	26.83	125.2	3.59	2.71	1471.
200	4.44	33.85	199	26.85	122.9	3.90	3.30	1470.
225	4.24	33.87	223	26.89	119.5	4.20	3.96	1470.
250	4.14	33.90	248	26.92	116.6	4.49	4.68	1470.



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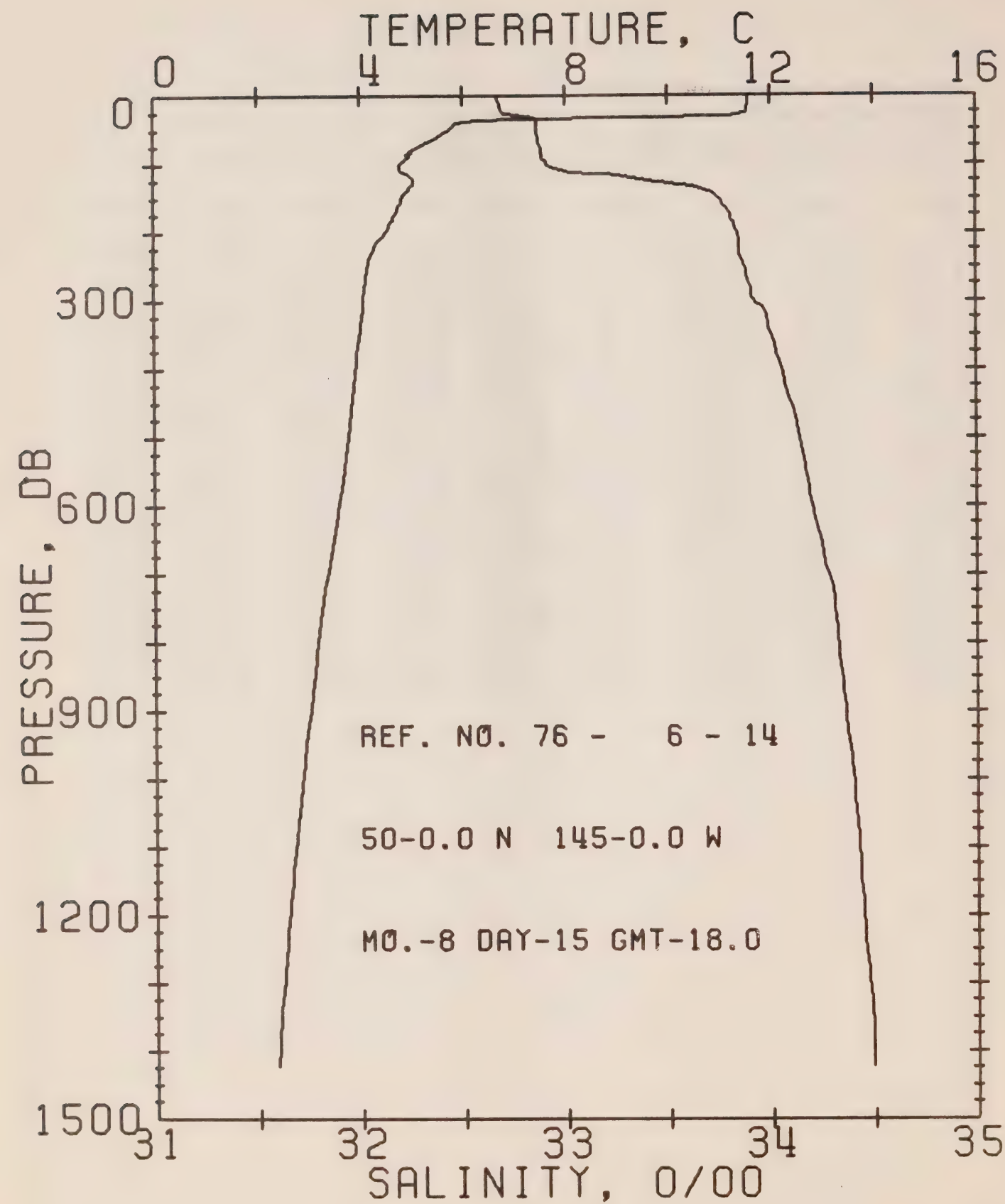
DATE 14/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.0

RESULTS OF STP CAST 189 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.61	32.66	0	24.87	309.1	0.0	0.0	1493.
10	11.61	32.66	10	24.87	309.6	0.31	0.02	1493.
20	11.60	32.67	20	24.88	308.9	0.62	0.06	1493.
30	11.58	32.80	30	24.98	299.2	0.93	0.14	1494.
50	6.03	32.87	50	25.89	212.6	1.37	0.32	1473.
75	5.68	32.87	75	25.94	208.8	1.90	0.66	1472.
100	5.13	32.89	99	26.02	201.4	2.41	1.11	1470.
125	4.95	33.24	124	26.31	173.5	2.89	1.66	1470.
150	4.95	33.77	149	26.73	134.0	3.26	2.18	1472.
175	4.70	33.80	174	26.78	129.0	3.59	2.72	1471.
200	4.46	33.82	199	26.82	125.4	3.91	3.33	1470.
225	4.33	33.83	223	26.85	123.3	4.22	4.00	1470.
250	4.23	33.85	248	26.88	120.8	4.52	4.74	1470.
300	4.08	33.92	298	26.95	114.5	5.11	6.40	1471.
400	3.92	34.04	397	27.05	105.2	6.21	10.30	1472.
500	3.78	34.13	496	27.14	97.9	7.22	14.94	1473.
600	3.55	34.22	595	27.24	89.1	8.16	20.18	1474.
800	3.17	34.32	793	27.35	79.2	9.82	31.99	1476.
1000	2.86	34.40	990	27.44	71.2	11.32	45.72	1478.
1200	2.58	34.45	1188	27.51	65.5	12.70	61.12	1480.



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REFERENCE NO. 76- 6- 14

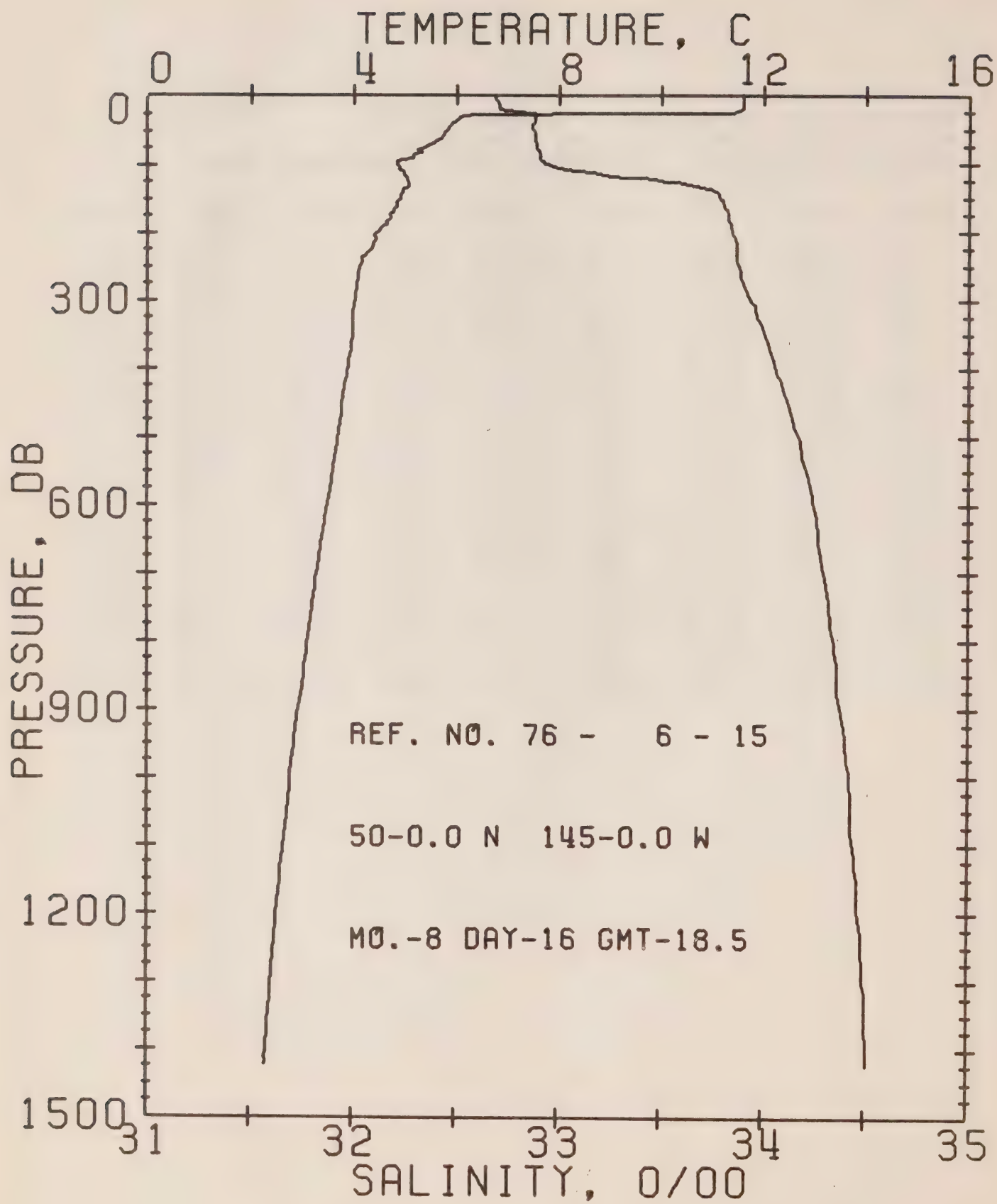
DATE 15/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.0

RESULTS OF STP CAST 174 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.58	32.67	0	24.88	307.9	0.0	0.0	1493.
10	11.57	32.67	10	24.89	307.8	0.31	0.02	1493.
20	11.54	32.69	20	24.90	306.8	0.62	0.06	1493.
30	11.16	32.80	30	25.06	291.9	0.92	0.14	1492.
50	5.73	32.86	50	25.92	209.9	1.37	0.32	1472.
75	5.14	32.88	75	26.00	202.1	1.88	0.65	1470.
100	4.78	32.91	99	26.07	196.2	2.38	1.09	1469.
125	5.04	33.44	124	26.46	159.4	2.84	1.61	1471.
150	4.81	33.74	149	26.73	134.4	3.19	2.11	1471.
175	4.67	33.81	174	26.79	128.5	3.52	2.66	1471.
200	4.50	33.84	199	26.84	124.5	3.84	3.26	1471.
225	4.25	33.85	223	26.87	121.2	4.14	3.92	1470.
250	4.13	33.87	248	26.90	118.5	4.44	4.65	1470.
300	4.04	33.92	298	26.95	114.5	5.03	6.28	1470.
400	3.90	34.05	397	27.07	103.9	6.11	10.13	1472.
500	3.75	34.14	496	27.15	96.4	7.11	14.70	1473.
600	3.56	34.20	595	27.22	90.5	8.04	19.94	1474.
800	3.15	34.33	793	27.36	78.6	9.72	31.85	1475.
1000	2.84	34.40	990	27.44	71.0	11.22	45.56	1477.
1200	2.57	34.44	1188	27.50	65.9	12.58	60.88	1480.



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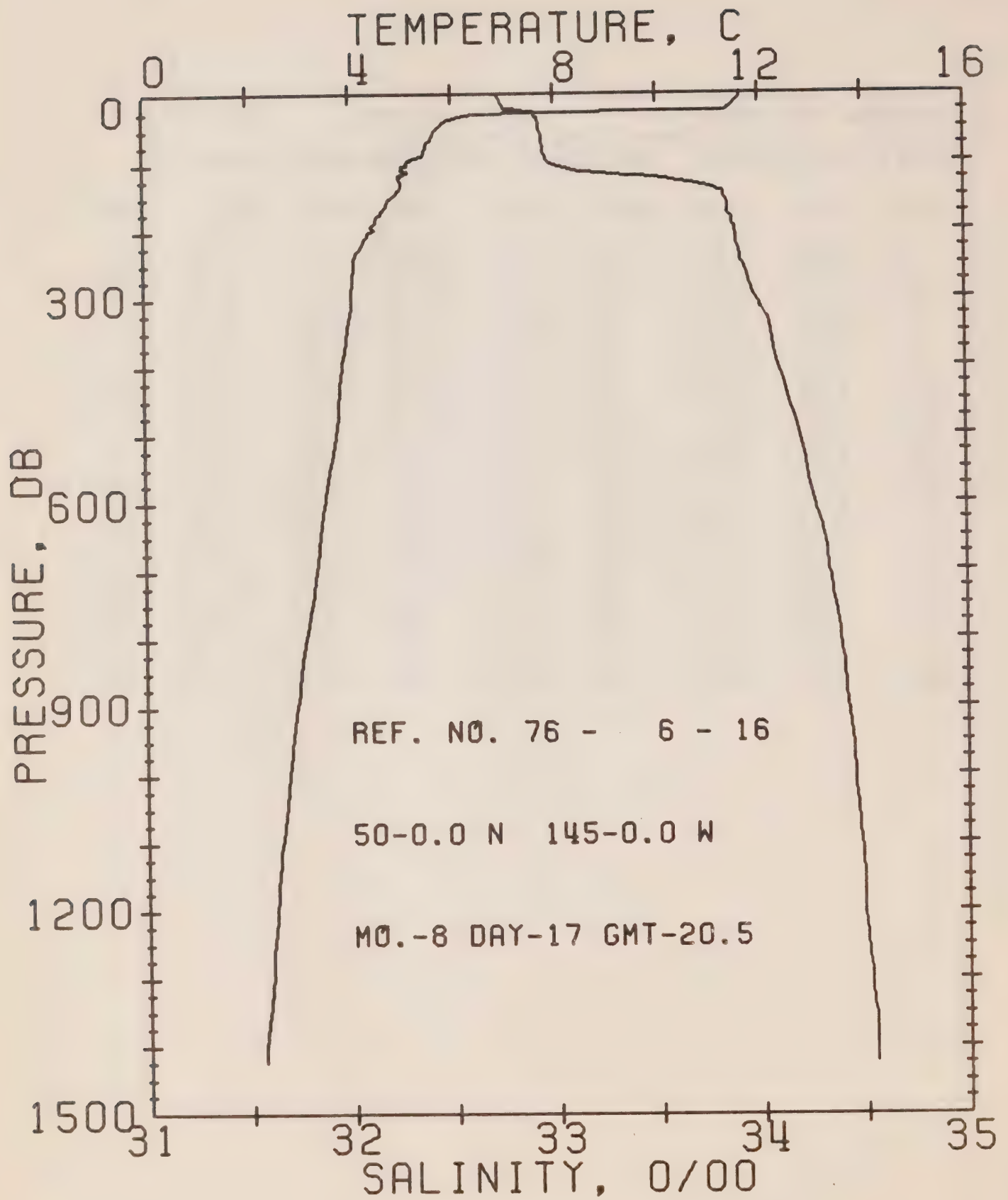
DATE 16/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.5

RESULTS OF STP CAST 202 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.60	32.69	0	24.89	306.8	0.0	0.0	1493.
10	11.60	32.70	10	24.90	306.6	0.31	0.02	1493.
20	11.59	32.71	20	24.91	305.8	0.61	0.06	1493.
30	6.22	32.89	30	25.88	213.2	0.89	0.13	1474.
50	5.80	32.87	50	25.92	210.0	1.31	0.30	1472.
75	5.43	32.89	75	25.98	204.5	1.83	0.63	1471.
100	4.86	32.93	99	26.08	195.4	2.33	1.08	1469.
125	5.06	33.52	124	26.52	153.6	2.78	1.59	1471.
150	4.90	33.78	149	26.75	132.4	3.12	2.08	1471.
175	4.71	33.83	174	26.81	127.0	3.45	2.61	1471.
200	4.46	33.85	199	26.85	123.2	3.76	3.21	1470.
225	4.31	33.87	223	26.88	120.3	4.06	3.87	1470.
250	4.12	33.88	248	26.91	117.9	4.36	4.59	1470.
300	4.02	33.94	298	26.97	112.6	4.94	6.21	1470.
400	3.88	34.06	397	27.08	102.9	6.02	10.04	1472.
500	3.69	34.17	496	27.18	93.6	7.00	14.54	1473.
600	3.49	34.24	595	27.26	86.7	7.90	19.58	1473.
800	3.11	34.35	793	27.38	76.5	9.53	31.18	1475.
1000	2.78	34.42	990	27.47	68.7	10.99	44.52	1477.
1200	2.52	34.46	1188	27.52	63.9	12.32	59.39	1480.



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REFERENCE NO. 76- 6- 16

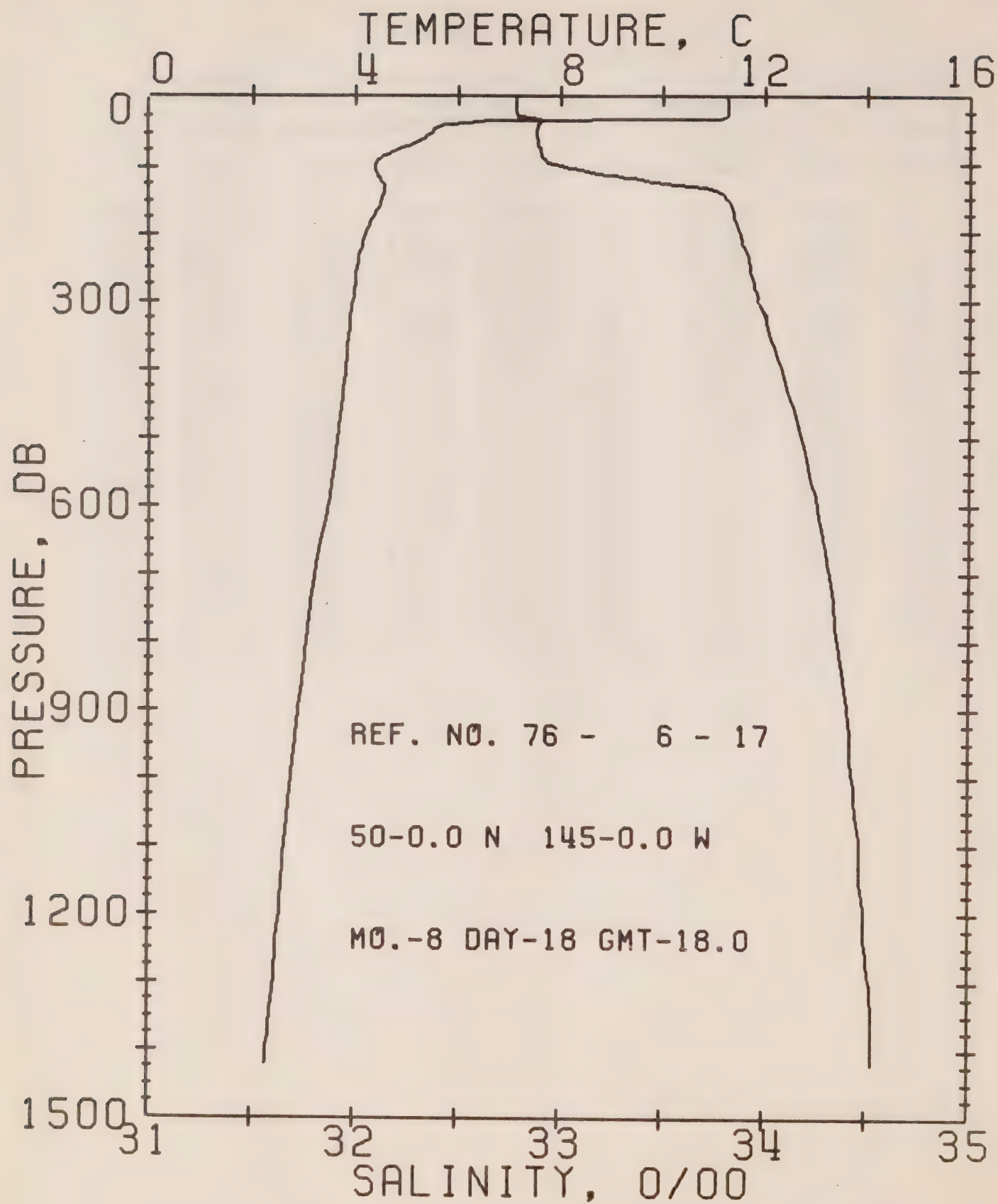
DATE 17/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 20.5

RESULTS OF STP CAST 194 POINTS TAKEN FROM ANALCG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.64	32.72	0	24.91	305.2	0.0	0.0	1493.
10	11.60	32.74	10	24.93	303.7	0.30	0.02	1493.
20	11.46	32.75	20	24.97	300.5	0.61	0.06	1493.
30	6.69	32.91	30	25.84	217.4	0.88	0.13	1476.
50	5.74	32.93	50	25.98	204.8	1.30	0.30	1472.
75	5.51	32.94	75	26.01	201.2	1.81	0.62	1472.
100	5.14	32.97	99	26.08	195.2	2.30	1.07	1471.
125	4.98	33.56	124	26.56	150.0	2.75	1.58	1471.
150	4.86	33.83	149	26.79	128.6	3.09	2.05	1471.
175	4.62	33.85	174	26.83	124.7	3.41	2.58	1471.
200	4.49	33.86	195	26.87	121.2	3.71	3.16	1471.
225	4.20	33.89	223	26.91	117.3	4.01	3.80	1470.
250	4.08	33.92	248	26.94	114.5	4.30	4.50	1470.
300	4.02	33.98	298	27.00	109.7	4.86	6.07	1470.
400	3.84	34.09	397	27.10	100.6	5.90	9.78	1471.
500	3.71	34.15	496	27.20	92.3	6.87	14.20	1473.
600	3.47	34.26	595	27.28	85.1	7.75	19.17	1473.
800	3.09	34.38	793	27.41	73.7	9.33	30.40	1475.
1000	2.75	34.45	990	27.49	66.3	10.73	43.17	1477.
1200	2.48	34.49	1188	27.55	61.5	12.00	57.38	1479.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 17

DATE 18/ 8/76

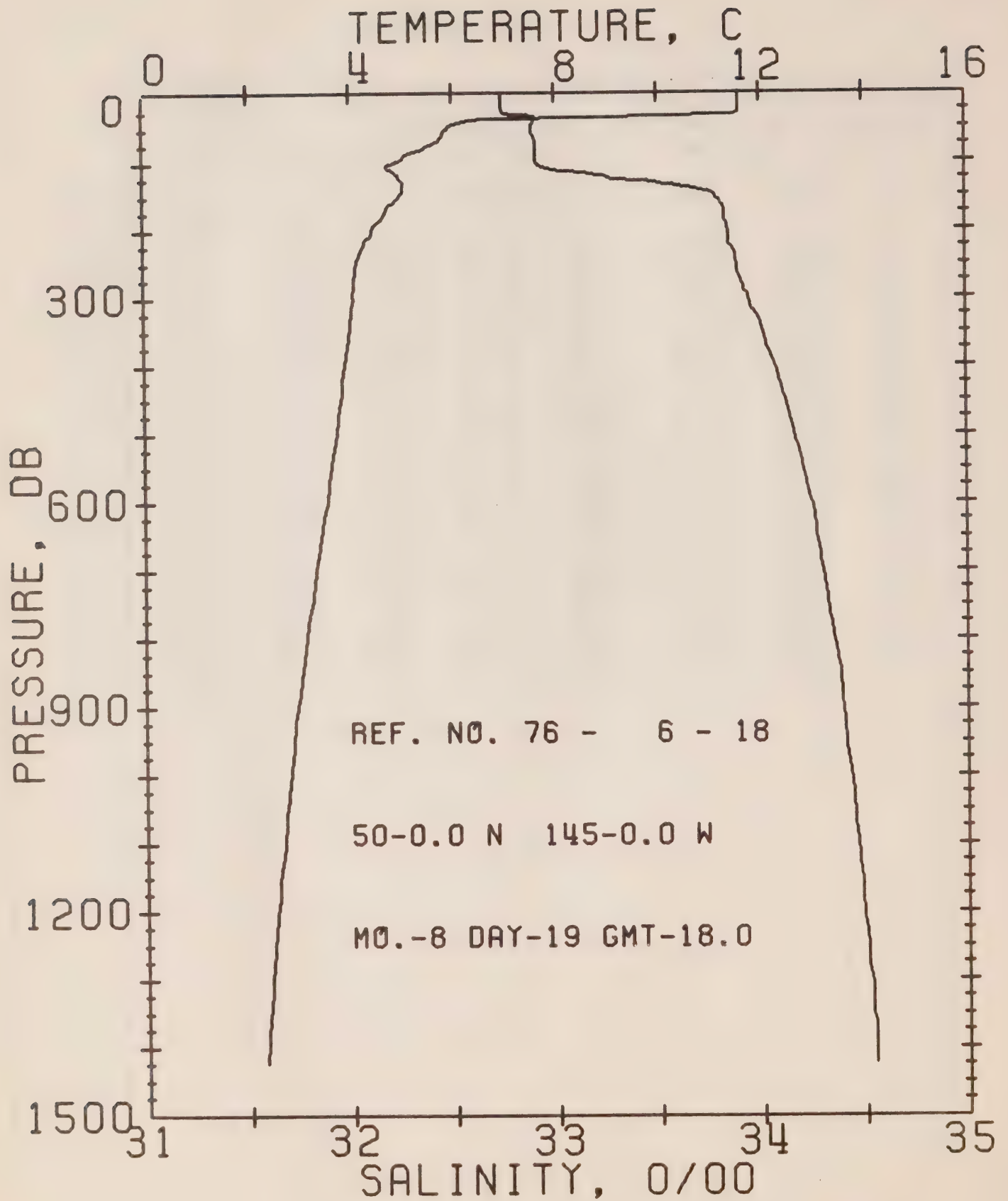
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 18.0

RESULTS OF STP CAST 171 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	11.25	32.78	0	25.03	294.1	0.0	0.0	1492.
10	11.27	32.78	10	25.02	294.9	0.29	0.02	1492.
20	11.28	32.78	20	25.02	295.2	0.59	0.06	1492.
30	11.25	32.79	30	25.04	294.2	0.88	0.14	1493.
50	5.51	32.89	50	25.97	205.4	1.35	0.32	1471.
75	4.95	32.89	75	26.04	198.9	1.85	0.64	1469.
100	4.38	32.97	99	26.16	187.5	2.34	1.08	1467.
125	4.52	33.45	124	26.53	153.1	2.77	1.57	1469.
150	4.51	33.81	149	26.81	126.2	3.11	2.04	1470.
175	4.36	33.85	174	26.86	121.9	3.42	2.55	1470.
200	4.20	33.87	199	26.90	118.6	3.72	3.13	1469.
225	4.10	33.90	223	26.93	115.6	4.01	3.76	1469.
250	4.02	33.93	248	26.96	113.1	4.30	4.45	1470.
300	3.95	33.97	298	27.00	109.7	4.85	6.01	1470.
400	3.82	34.08	397	27.10	100.6	5.90	9.74	1471.
500	3.66	34.18	496	27.19	92.5	6.87	14.16	1472.
600	3.48	34.26	595	27.27	85.7	7.76	19.15	1473.
800	3.07	34.36	793	27.39	75.0	9.35	30.47	1475.
1000	2.76	34.43	990	27.48	67.6	10.77	43.44	1477.
1200	2.54	34.49	1188	27.54	62.1	12.06	57.96	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 18

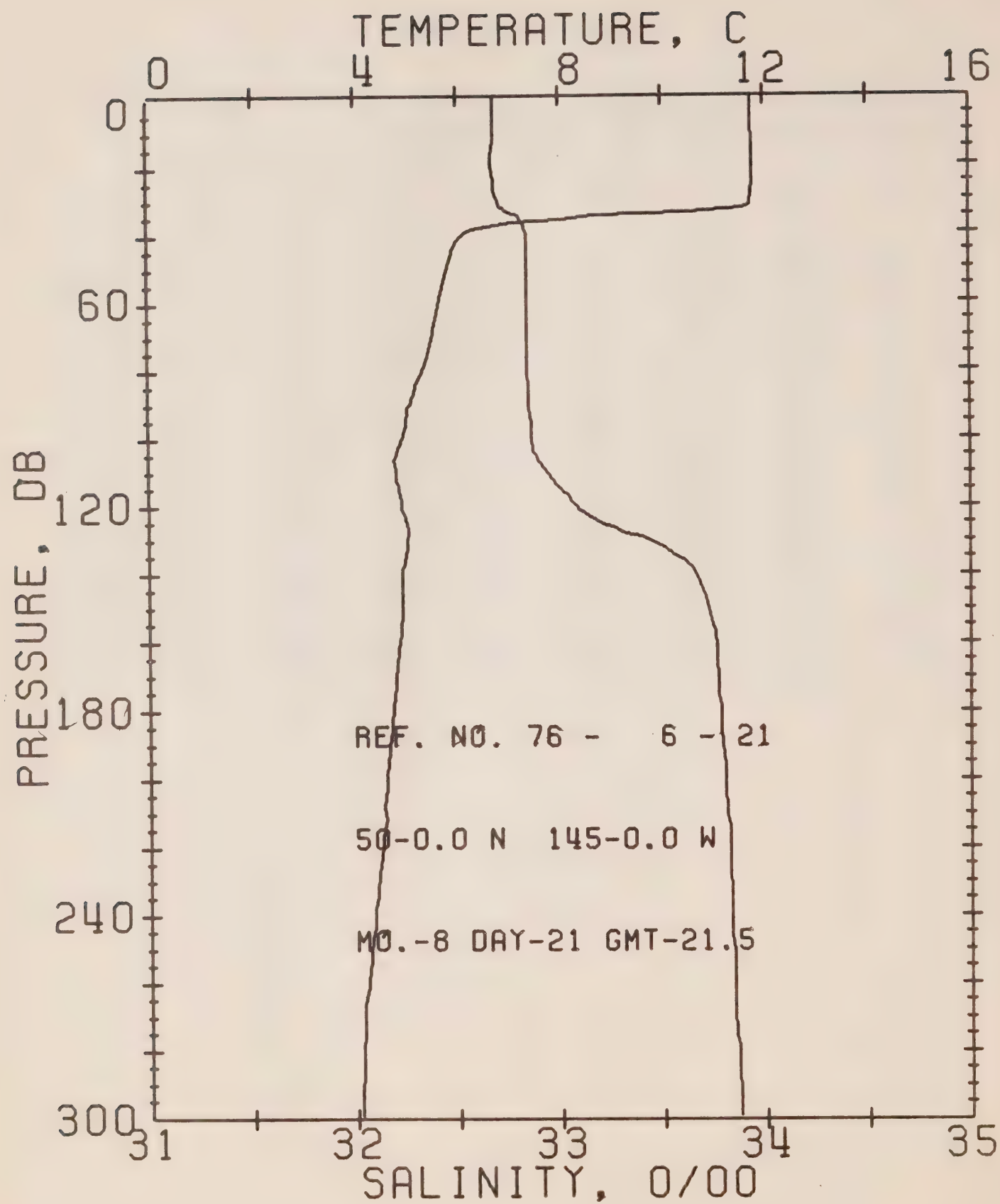
DATE 19/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.0

RESULTS OF STP CAST 204 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.60	32.74	0	24.93	303.1	0.0	0.0	1493.
10	11.60	32.74	10	24.93	303.6	0.30	0.02	1493.
20	11.60	32.74	20	24.93	303.7	0.61	0.06	1494.
30	11.59	32.75	30	24.94	303.0	0.91	0.14	1494.
50	5.92	32.89	50	25.92	209.9	1.38	0.33	1473.
75	5.60	32.91	75	25.98	204.9	1.90	0.66	1472.
100	4.95	32.91	99	26.05	197.9	2.41	1.11	1470.
125	4.98	33.28	124	26.34	170.8	2.87	1.64	1471.
150	4.98	33.78	149	26.74	133.6	3.24	2.16	1472.
175	4.68	33.83	174	26.81	126.7	3.57	2.69	1471.
200	4.44	33.84	199	26.84	123.5	3.88	3.29	1470.
225	4.25	33.86	223	26.88	120.7	4.18	3.95	1470.
250	4.12	33.88	248	26.91	117.4	4.48	4.67	1470.
300	4.06	33.94	298	26.96	113.1	5.06	6.29	1471.
400	3.89	34.07	397	27.08	102.5	6.13	10.11	1472.
500	3.72	34.16	496	27.17	94.5	7.12	14.62	1473.
600	3.53	34.24	595	27.26	87.3	8.02	19.70	1474.
800	3.11	34.35	793	27.38	76.1	9.65	31.29	1475.
1000	2.79	34.43	990	27.47	68.1	11.09	44.45	1477.
1200	2.52	34.49	1188	27.54	62.0	12.39	59.00	1480.



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REFERENCE NO. 76- 6- 21

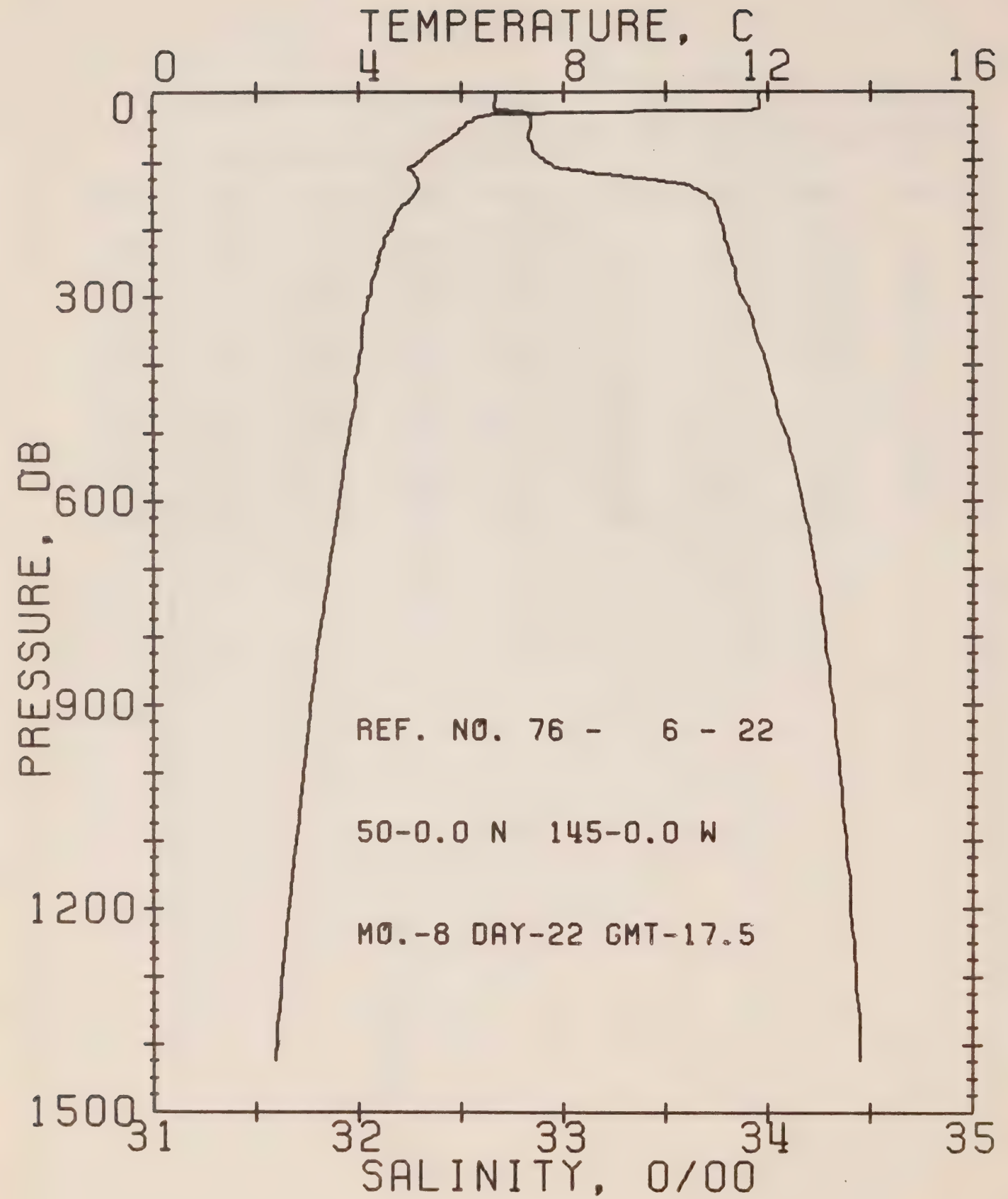
DATE 21/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.5

RESULTS OF STP CAST 120 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.77	32.68	0	24.86	310.5	0.0	0.0	1494.
10	11.77	32.68	10	24.85	310.9	0.31	0.02	1494.
20	11.78	32.67	20	24.85	312.1	0.62	0.06	1494.
30	11.74	32.69	30	24.87	309.7	0.93	0.14	1494.
50	5.79	32.84	50	25.90	212.0	1.41	0.33	1472.
75	5.41	32.84	75	25.94	208.0	1.94	0.67	1471.
100	4.91	32.86	99	26.02	201.2	2.45	1.12	1469.
125	5.00	33.21	124	26.28	176.2	2.93	1.67	1471.
150	4.90	33.72	149	26.70	137.1	3.30	2.19	1471.
175	4.76	33.77	174	26.75	132.1	3.63	2.75	1471.
200	4.59	33.80	199	26.80	128.3	3.96	3.37	1471.
225	4.46	33.82	223	26.83	125.6	4.27	4.05	1471.
250	4.28	33.84	248	26.86	122.7	4.59	4.80	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 22

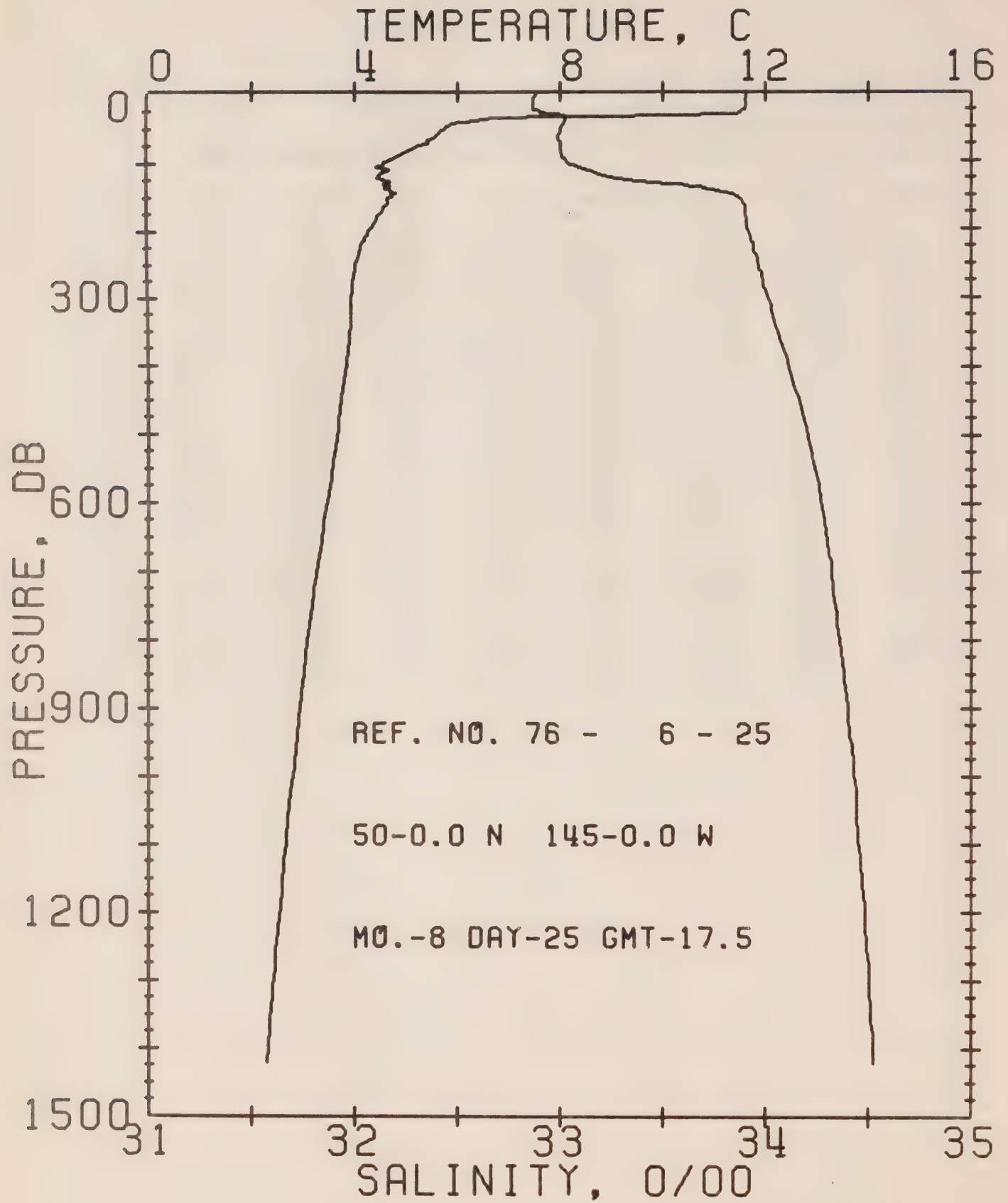
DATE 22/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 194 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.83	32.67	0	24.84	312.2	0.0	0.0	1494.
10	11.82	32.67	10	24.84	312.6	0.31	0.02	1494.
20	11.83	32.66	20	24.83	313.7	0.63	0.06	1494.
30	9.00	32.81	30	25.43	256.6	0.93	0.14	1484.
50	6.04	32.84	50	25.87	215.0	1.37	0.32	1473.
75	5.62	32.84	75	25.92	210.4	1.90	0.66	1472.
100	5.21	32.90	99	26.02	201.3	2.42	1.12	1471.
125	5.13	33.33	124	26.37	168.4	2.89	1.66	1471.
150	5.09	33.70	149	26.66	141.1	3.27	2.18	1472.
175	4.76	33.75	174	26.74	133.6	3.61	2.75	1471.
200	4.62	33.78	199	26.78	130.1	3.94	3.38	1471.
225	4.48	33.80	223	26.81	127.3	4.26	4.08	1471.
250	4.35	33.83	248	26.84	124.0	4.58	4.84	1471.
300	4.22	33.88	298	26.90	119.3	5.19	6.55	1471.
400	3.98	33.99	397	27.01	109.3	6.32	10.60	1472.
500	3.81	34.08	496	27.10	101.3	7.38	15.44	1473.
600	3.60	34.17	595	27.19	93.6	8.35	20.89	1474.
800	3.21	34.28	793	27.32	82.6	10.11	33.38	1476.
1000	2.90	34.35	990	27.40	75.2	11.69	47.83	1478.
1200	2.62	34.40	1188	27.46	69.7	13.13	64.01	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 25

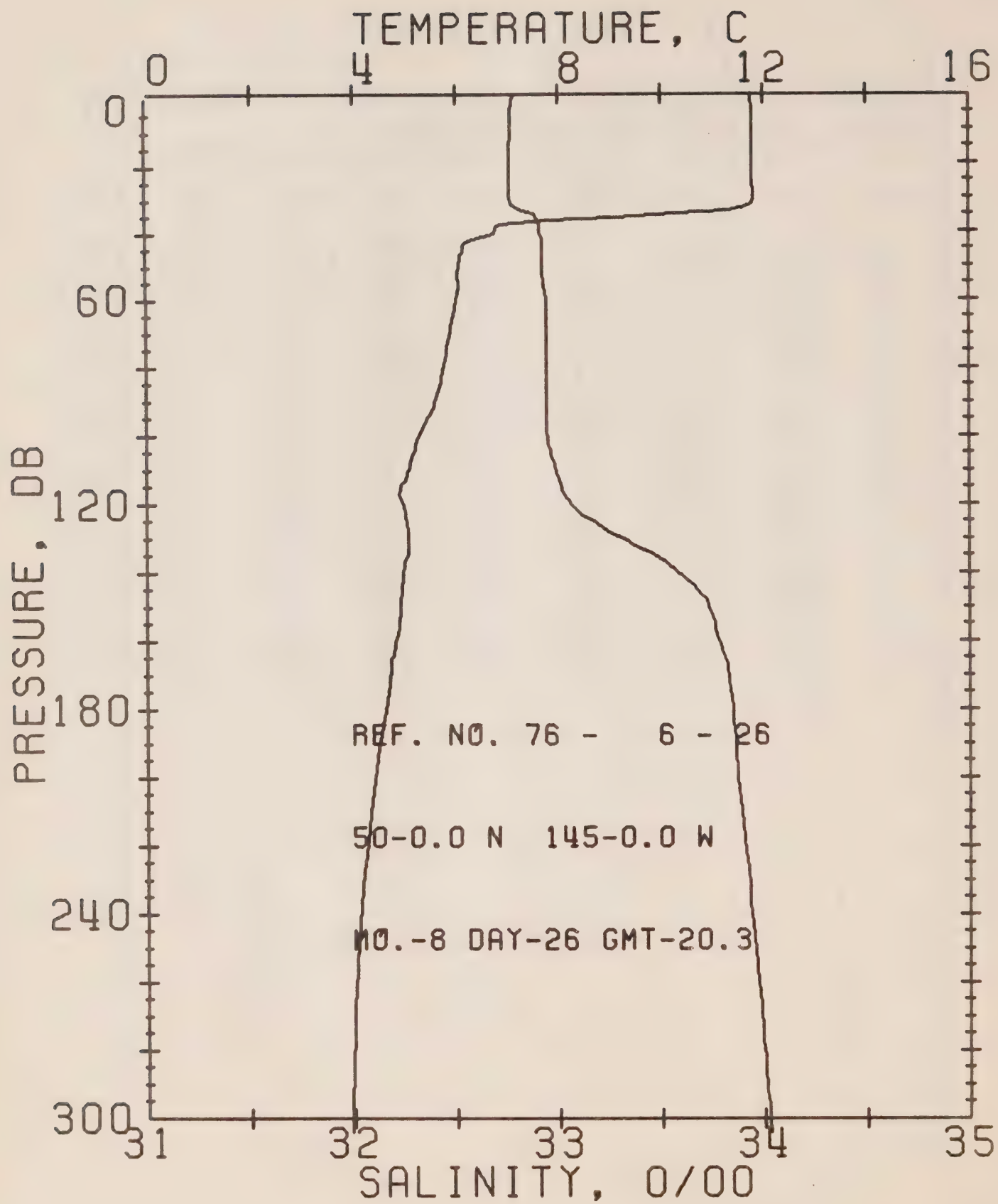
DATE 25/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 191 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.63	32.88	0	25.04	293.3	0.0	0.0	1494.
10	11.61	32.87	10	25.03	294.1	0.29	0.01	1494.
20	11.63	32.87	20	25.03	294.6	0.59	0.06	1494.
30	11.51	32.90	30	25.07	290.6	0.88	0.13	1494.
50	5.81	33.01	50	26.03	199.5	1.33	0.32	1472.
75	5.43	33.00	75	26.07	196.2	1.83	0.63	1471.
100	4.68	33.02	99	26.17	186.5	2.31	1.06	1469.
125	4.43	33.26	124	26.38	166.5	2.75	1.57	1468.
150	4.73	33.85	149	26.82	125.6	3.11	2.07	1471.
175	4.51	33.90	174	26.88	119.7	3.42	2.57	1470.
200	4.29	33.91	199	26.91	116.9	3.71	3.14	1470.
225	4.11	33.94	223	26.96	113.0	4.00	3.76	1470.
250	4.00	33.96	248	26.98	110.6	4.28	4.43	1470.
300	3.92	34.01	298	27.03	106.4	4.82	5.95	1470.
400	3.82	34.11	397	27.12	98.5	5.85	9.61	1471.
500	3.66	34.21	496	27.22	90.5	6.79	13.93	1473.
600	3.46	34.27	595	27.29	84.4	7.66	18.82	1473.
800	3.07	34.36	793	27.39	75.2	9.25	30.13	1475.
1000	2.79	34.43	990	27.47	68.2	10.68	43.21	1477.
1200	2.54	34.48	1188	27.54	62.9	11.99	57.88	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 26

DATE 26/ 8/76

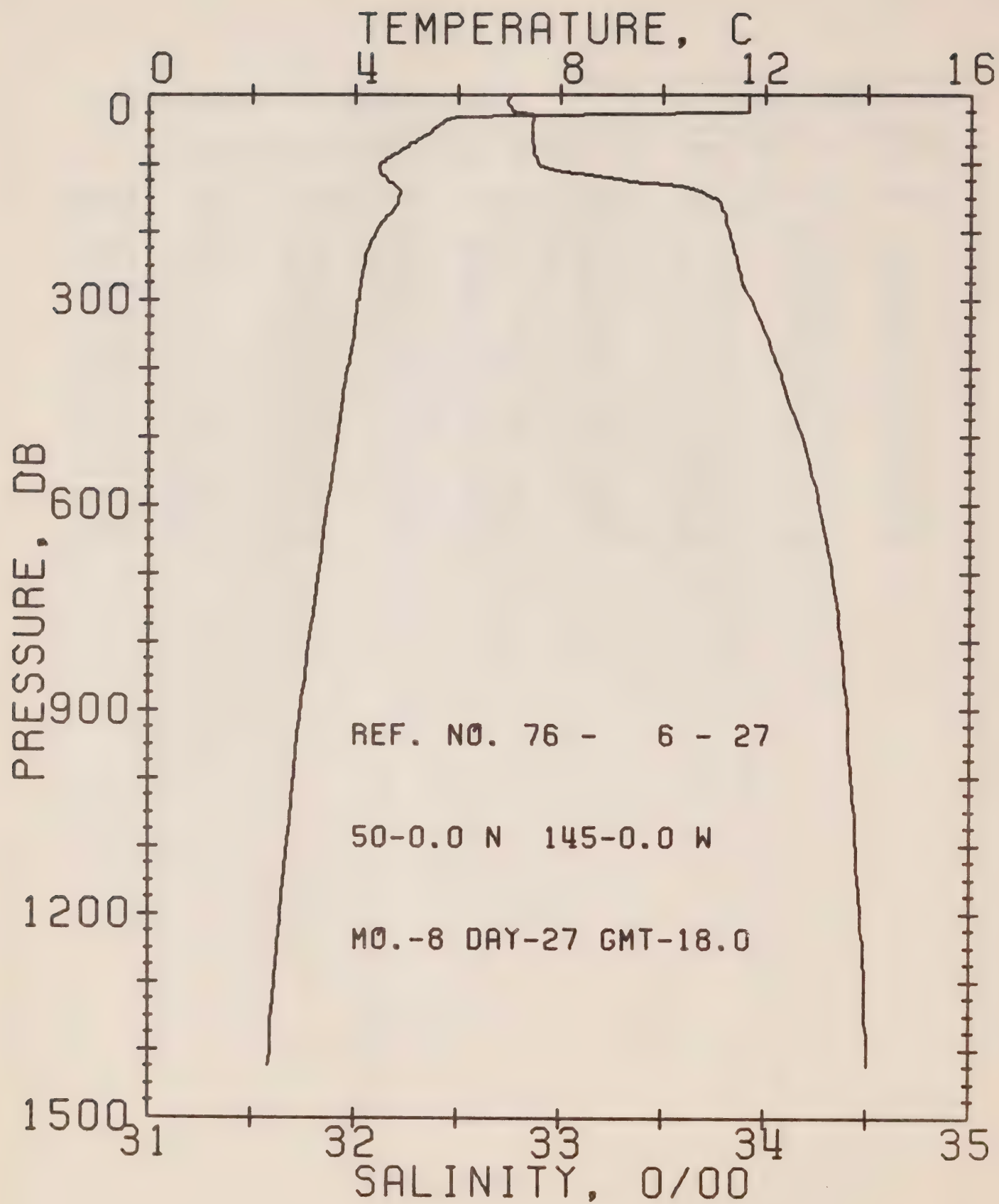
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 20.3

RESULTS OF STP CAST 108 POINTS TAKEN FROM ANALCG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.77	32.78	0	24.93	303.1	0.0	0.0	1494.
10	11.79	32.77	10	24.92	304.6	0.30	0.02	1494.
20	11.79	32.76	20	24.91	305.6	0.61	0.06	1494.
30	11.80	32.76	30	24.91	305.9	0.91	0.14	1494.
50	6.04	32.92	50	25.93	209.0	1.39	0.33	1473.
75	5.81	32.94	75	25.97	205.1	1.91	0.66	1473.
100	5.26	32.94	99	26.04	198.8	2.42	1.11	1471.
125	5.04	33.18	124	26.25	178.9	2.90	1.66	1471.
150	4.90	33.73	149	26.71	136.4	3.28	2.20	1471.
175	4.66	33.84	174	26.82	126.1	3.61	2.74	1471.
200	4.41	33.87	199	26.87	121.1	3.92	3.33	1470.
225	4.21	33.92	223	26.93	115.8	4.21	3.97	1470.
250	4.07	33.95	248	26.97	111.7	4.50	4.66	1470.
300	3.96	34.02	298	27.04	106.0	5.04	6.18	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 27

DATE 27/ 8/76

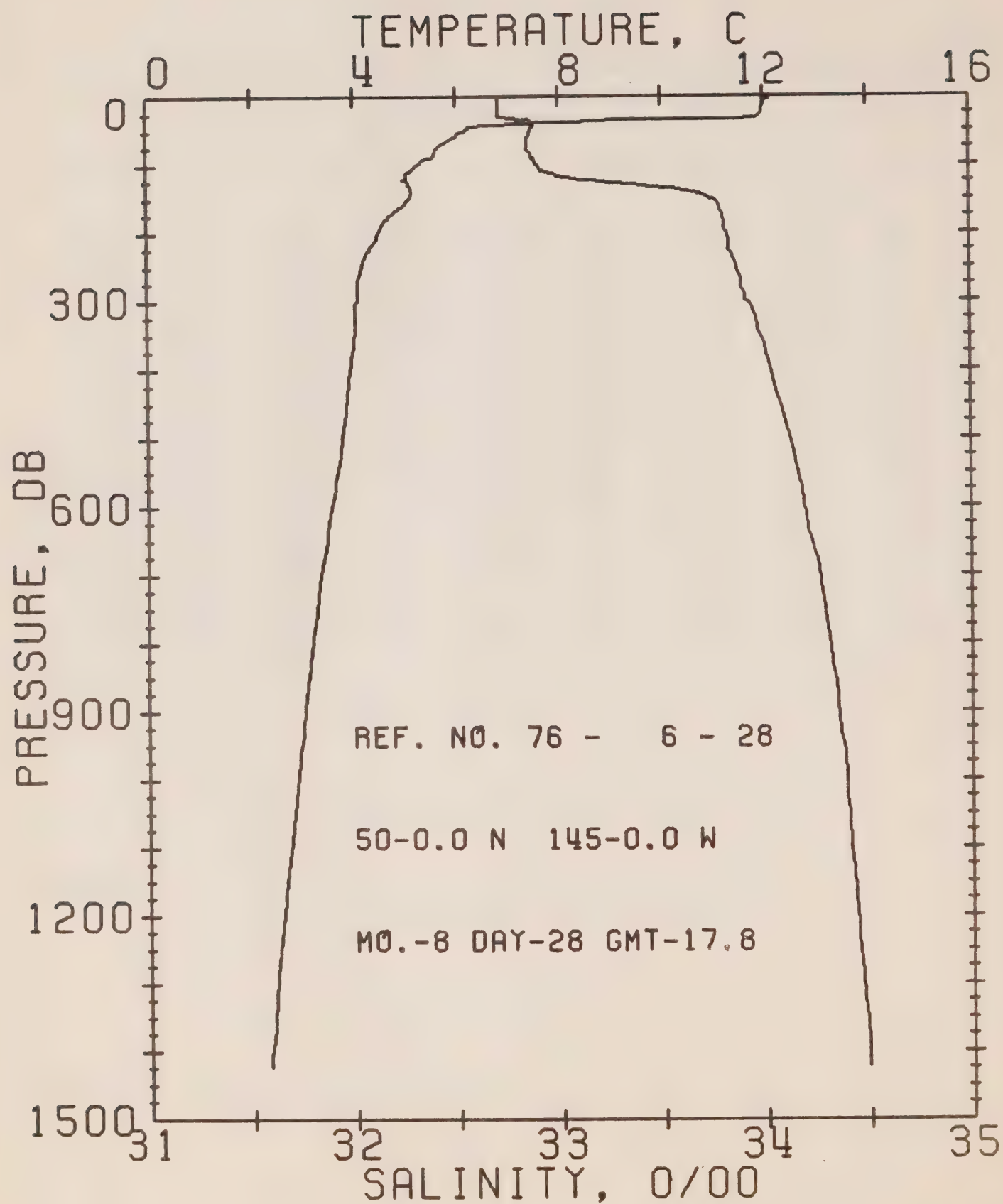
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 18.0

RESULTS OF STP CAST 194 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.69	32.75	0	24.92	303.9	0.0	0.0	1494.
10	11.69	32.74	10	24.92	305.0	0.30	0.02	1494.
20	11.68	32.76	20	24.93	304.0	0.61	0.06	1494.
30	8.06	32.86	30	25.61	239.3	0.90	0.14	1481.
50	5.52	32.86	50	25.95	207.5	1.32	0.31	1471.
75	5.01	32.87	75	26.01	201.6	1.83	0.63	1469.
100	4.50	32.89	99	26.08	194.7	2.33	1.07	1468.
125	4.62	33.32	124	26.41	163.7	2.78	1.60	1469.
150	4.83	33.74	149	26.72	135.0	3.15	2.10	1471.
175	4.65	33.81	174	26.79	128.3	3.47	2.64	1471.
200	4.40	33.82	199	26.83	124.5	3.79	3.25	1470.
225	4.24	33.84	223	26.87	121.5	4.10	3.91	1470.
250	4.17	33.87	248	26.89	119.2	4.40	4.64	1470.
300	4.07	33.91	298	26.94	115.5	4.98	6.28	1471.
400	3.85	34.07	397	27.09	102.1	6.06	10.13	1471.
500	3.66	34.18	496	27.19	92.5	7.04	14.59	1472.
600	3.46	34.27	595	27.28	84.9	7.92	19.55	1473.
800	3.11	34.37	793	27.40	74.5	9.51	30.82	1475.
1000	2.82	34.42	990	27.47	69.0	10.94	43.91	1477.
1200	2.57	34.47	1188	27.53	63.9	12.27	58.80	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 28

DATE 28/ 8/76

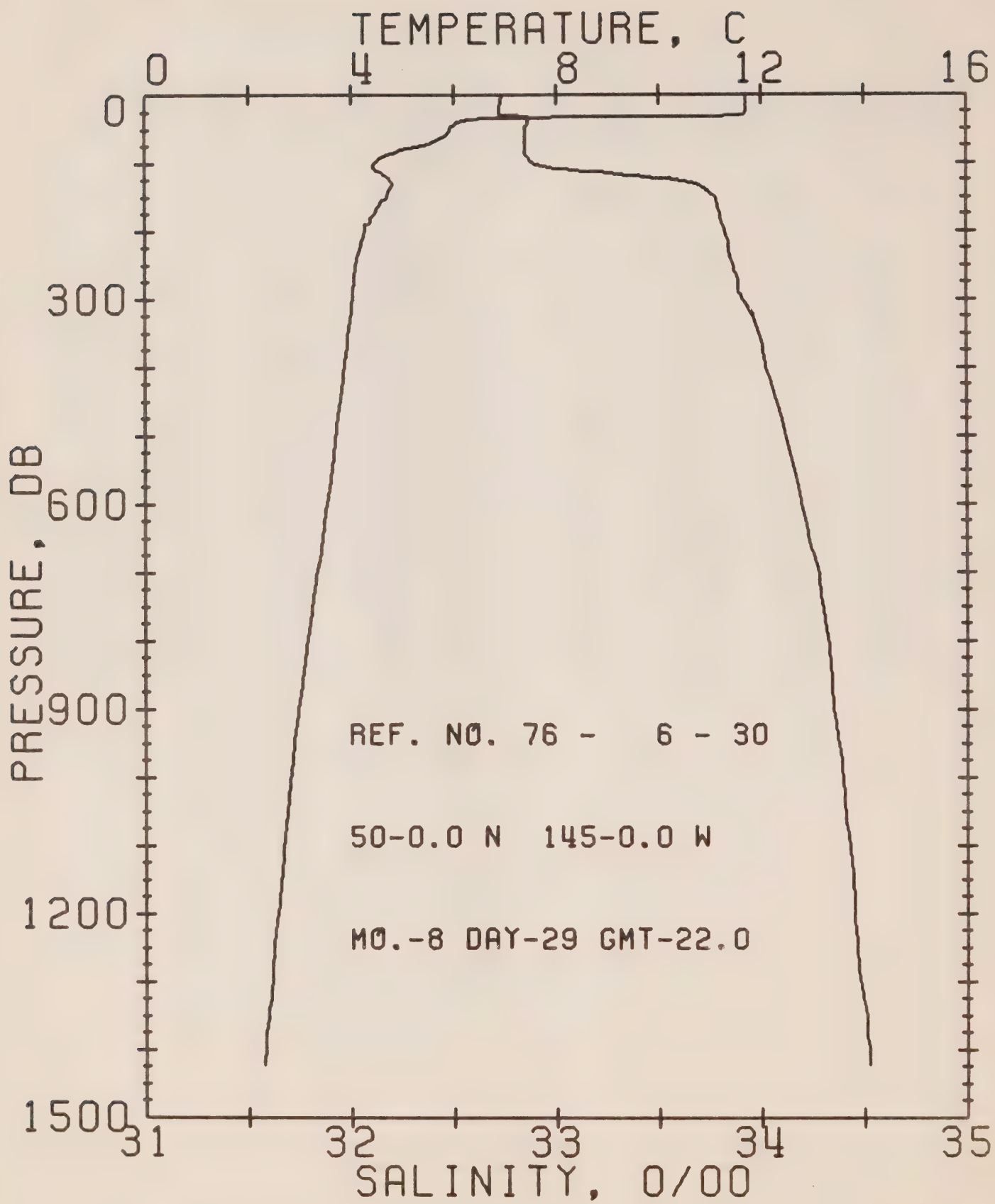
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.8

RESULTS OF STP CAST 197 POINTS TAKEN FROM ANALCG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.13	32.71	0	24.81	314.7	0.0	0.0	1495.
10	12.02	32.71	10	24.83	313.0	0.31	0.02	1495.
20	11.97	32.71	20	24.84	312.5	0.63	0.06	1495.
30	11.92	32.71	30	24.85	311.7	0.94	0.14	1495.
50	6.19	32.87	50	25.87	214.5	1.43	0.34	1474.
75	5.64	32.85	75	25.92	209.9	1.96	0.68	1472.
100	5.26	32.90	99	26.00	202.3	2.48	1.14	1471.
125	5.05	33.23	124	26.30	175.0	2.96	1.69	1471.
150	5.08	33.75	149	26.70	136.9	3.34	2.22	1472.
175	4.69	33.80	174	26.78	129.1	3.67	2.77	1471.
200	4.47	33.82	199	26.82	125.4	3.99	3.38	1470.
225	4.29	33.83	223	26.85	123.1	4.30	4.05	1470.
250	4.15	33.87	248	26.90	119.1	4.60	4.78	1470.
300	4.07	33.91	298	26.94	115.5	5.19	6.42	1471.
400	3.92	34.03	397	27.05	105.8	6.29	10.33	1472.
500	3.76	34.12	496	27.14	98.0	7.30	15.00	1473.
600	3.55	34.19	595	27.21	91.5	8.25	20.29	1474.
800	3.16	34.31	793	27.35	79.6	9.95	32.39	1475.
1000	2.87	34.39	990	27.44	72.0	11.46	46.25	1478.
1200	2.58	34.44	1188	27.50	66.6	12.85	61.78	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 30

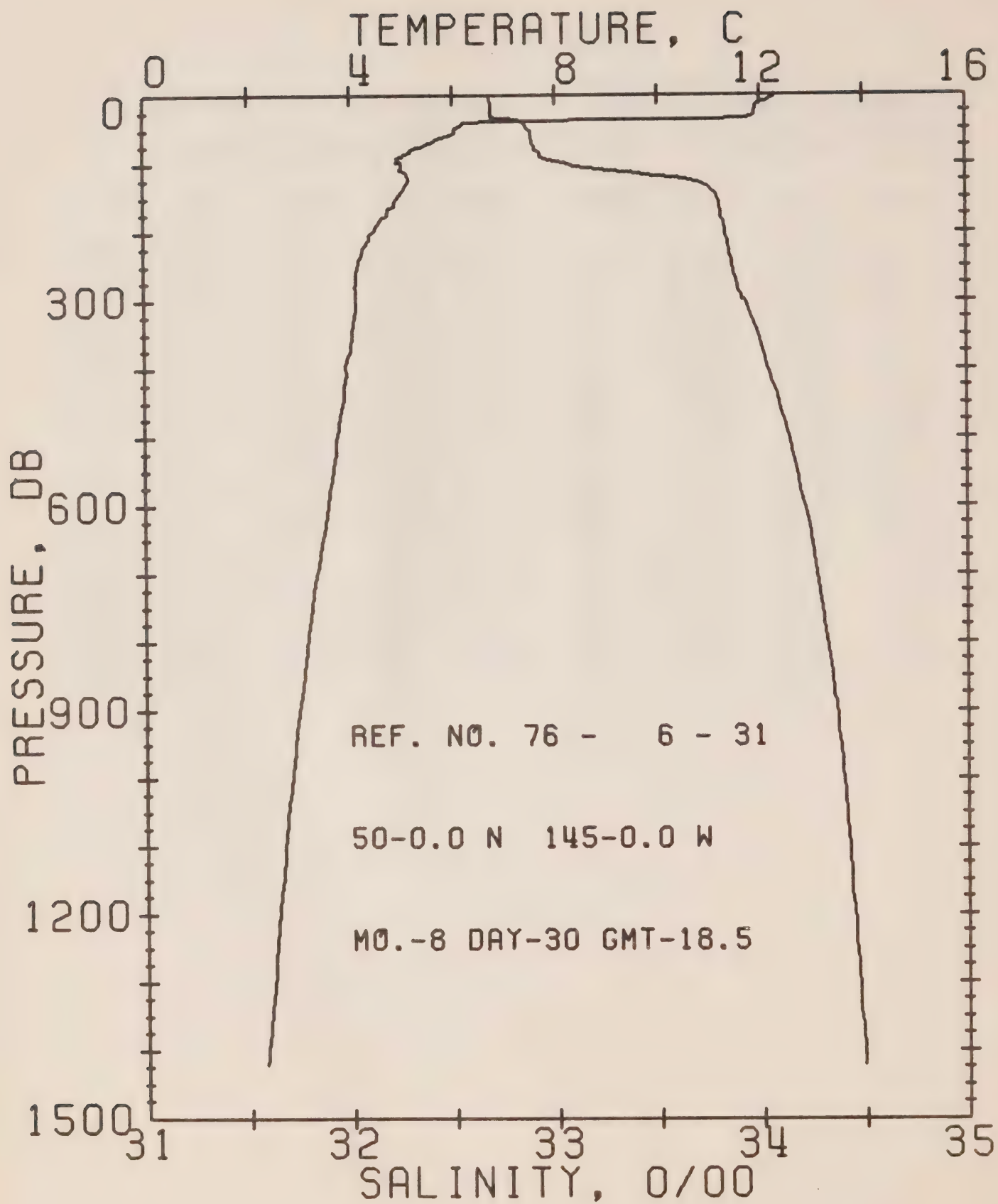
DATE 29/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 22.0

RESULTS OF STP CAST 184 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	11.70	32.74	0	24.91	304.8	0.0	0.0	1494.
10	11.70	32.73	10	24.91	306.0	0.31	0.02	1494.
20	11.71	32.72	20	24.90	307.2	0.61	0.06	1494.
30	11.65	32.72	30	24.91	306.3	0.92	0.14	1494.
50	5.92	32.85	50	25.89	212.9	1.37	0.32	1473.
75	5.33	32.85	75	25.96	206.3	1.90	0.66	1471.
100	4.45	32.89	99	26.09	194.2	2.40	1.10	1468.
125	4.75	33.58	124	26.60	145.9	2.83	1.60	1470.
150	4.67	33.77	149	26.76	130.8	3.17	2.07	1470.
175	4.44	33.80	174	26.81	126.5	3.49	2.61	1470.
200	4.26	33.82	199	26.85	123.4	3.81	3.20	1470.
225	4.15	33.84	223	26.87	120.9	4.11	3.86	1470.
250	4.09	33.86	248	26.90	118.8	4.41	4.59	1470.
300	4.03	33.91	298	26.94	115.0	5.00	6.22	1470.
400	3.85	34.02	397	27.05	105.4	6.08	10.09	1471.
500	3.69	34.12	496	27.14	97.5	7.10	14.73	1473.
600	3.52	34.19	595	27.22	90.7	8.04	20.00	1474.
800	3.14	34.33	793	27.36	78.3	9.72	31.96	1475.
1000	2.81	34.39	990	27.44	71.1	11.22	45.68	1477.
1200	2.56	34.45	1188	27.51	65.3	12.58	60.91	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 31

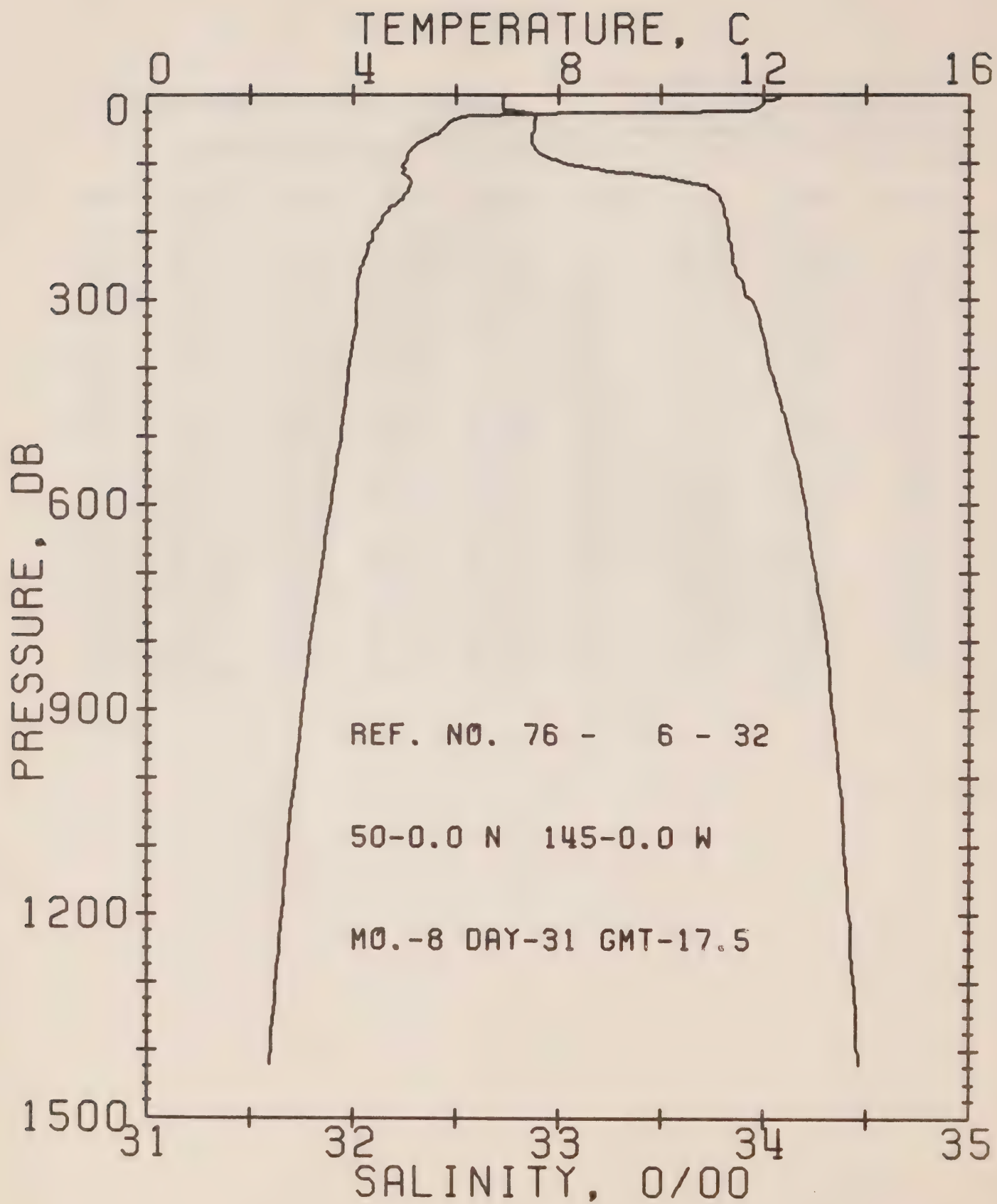
DATE 30/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.5

RESULTS OF STP CAST 182 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.28	32.68	0	24.76	319.6	0.0	0.0	1496.
10	12.12	32.68	10	24.79	317.1	0.32	0.02	1495.
20	11.91	32.69	20	24.84	312.9	0.63	0.06	1495.
30	11.89	32.69	30	24.84	312.7	0.95	0.14	1495.
50	6.03	32.87	50	25.89	212.6	1.44	0.34	1473.
75	5.41	32.90	75	25.99	203.7	1.96	0.67	1471.
100	4.99	33.06	99	26.16	187.2	2.46	1.11	1470.
125	5.12	33.67	124	26.64	142.8	2.87	1.59	1472.
150	4.92	33.79	149	26.75	132.1	3.21	2.06	1472.
175	4.69	33.81	174	26.79	128.4	3.54	2.60	1471.
200	4.45	33.83	199	26.83	124.5	3.86	3.21	1470.
225	4.25	33.85	223	26.87	121.2	4.16	3.87	1470.
250	4.13	33.86	248	26.89	119.4	4.46	4.60	1470.
300	4.11	33.94	298	26.96	113.6	5.05	6.25	1471.
400	3.90	34.03	397	27.05	105.4	6.15	10.16	1472.
500	3.73	34.13	496	27.15	96.7	7.16	14.78	1473.
600	3.54	34.21	595	27.23	89.8	8.09	20.01	1474.
800	3.12	34.31	793	27.35	79.0	9.78	31.97	1475.
1000	2.82	34.39	990	27.44	71.2	11.27	45.66	1477.
1200	2.56	34.44	1188	27.50	65.8	12.64	60.98	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 32

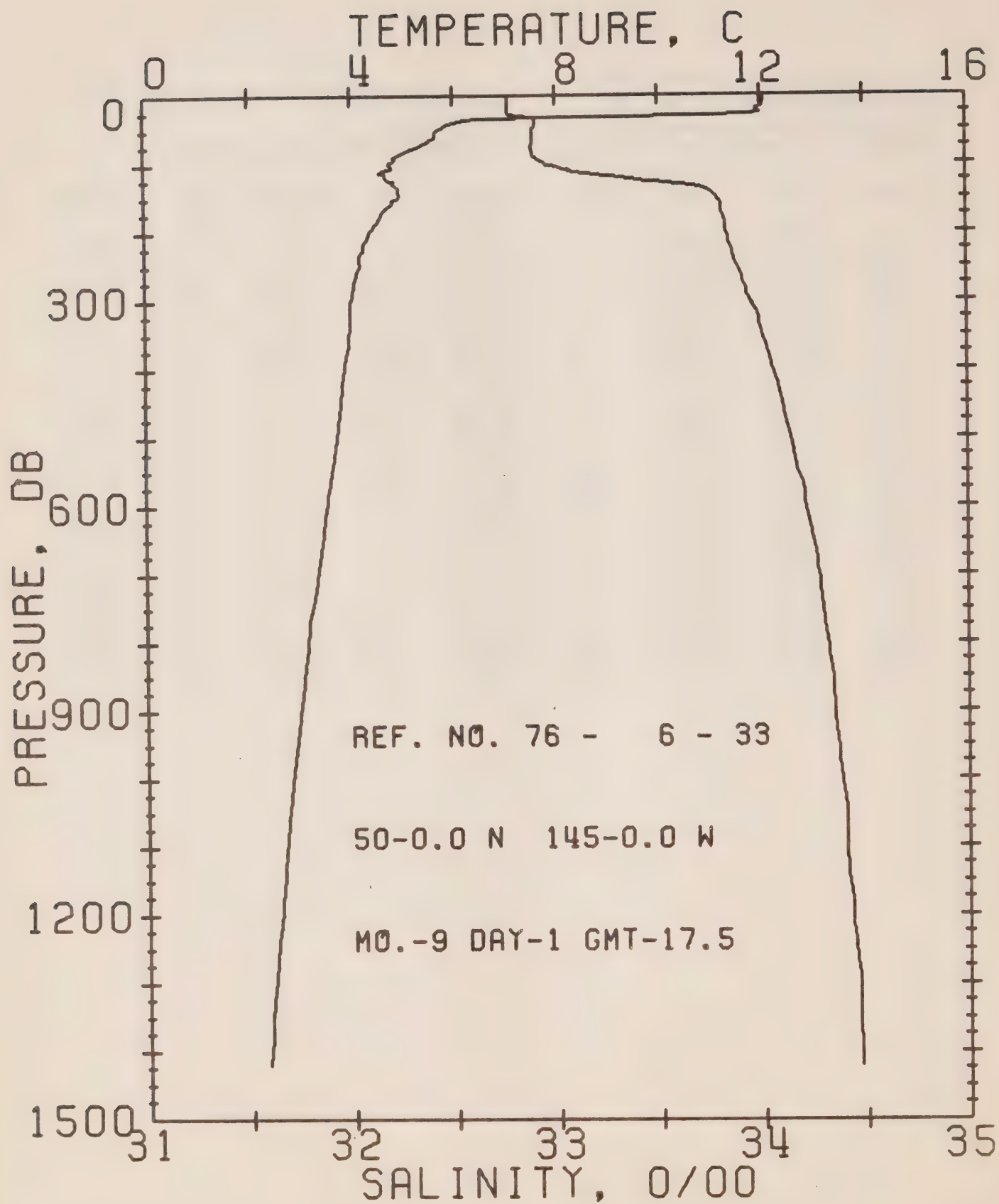
DATE 31/ 8/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 187 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.33	32.74	0	24.80	316.0	0.0	0.0	1496.
10	12.00	32.73	10	24.85	311.3	0.32	0.02	1495.
20	11.91	32.73	20	24.87	309.9	0.63	0.06	1495.
30	6.66	32.88	30	25.82	219.3	0.90	0.13	1475.
50	5.75	32.88	50	25.93	208.6	1.32	0.30	1472.
75	5.19	32.88	75	26.00	202.8	1.83	0.63	1470.
100	4.98	33.03	99	26.14	189.2	2.33	1.07	1470.
125	5.11	33.58	124	26.56	149.8	2.75	1.56	1472.
150	4.96	33.79	149	26.74	132.8	3.10	2.04	1472.
175	4.61	33.81	174	26.80	127.5	3.42	2.58	1471.
200	4.39	33.83	199	26.84	123.9	3.74	3.18	1470.
225	4.28	33.84	223	26.86	122.2	4.05	3.85	1470.
250	4.16	33.85	248	26.88	120.1	4.35	4.58	1470.
300	4.05	33.96	298	26.98	111.5	4.93	6.22	1471.
400	3.90	34.03	397	27.05	105.8	6.03	10.10	1472.
500	3.75	34.12	496	27.14	97.7	7.04	14.76	1473.
600	3.56	34.20	595	27.22	90.6	7.98	20.02	1474.
800	3.17	34.31	793	27.34	80.0	9.69	32.18	1475.
1000	2.87	34.37	990	27.42	73.7	11.23	46.27	1478.
1200	2.61	34.41	1188	27.48	68.6	12.65	62.15	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 33

DATE 1/ 9/76

STATION P

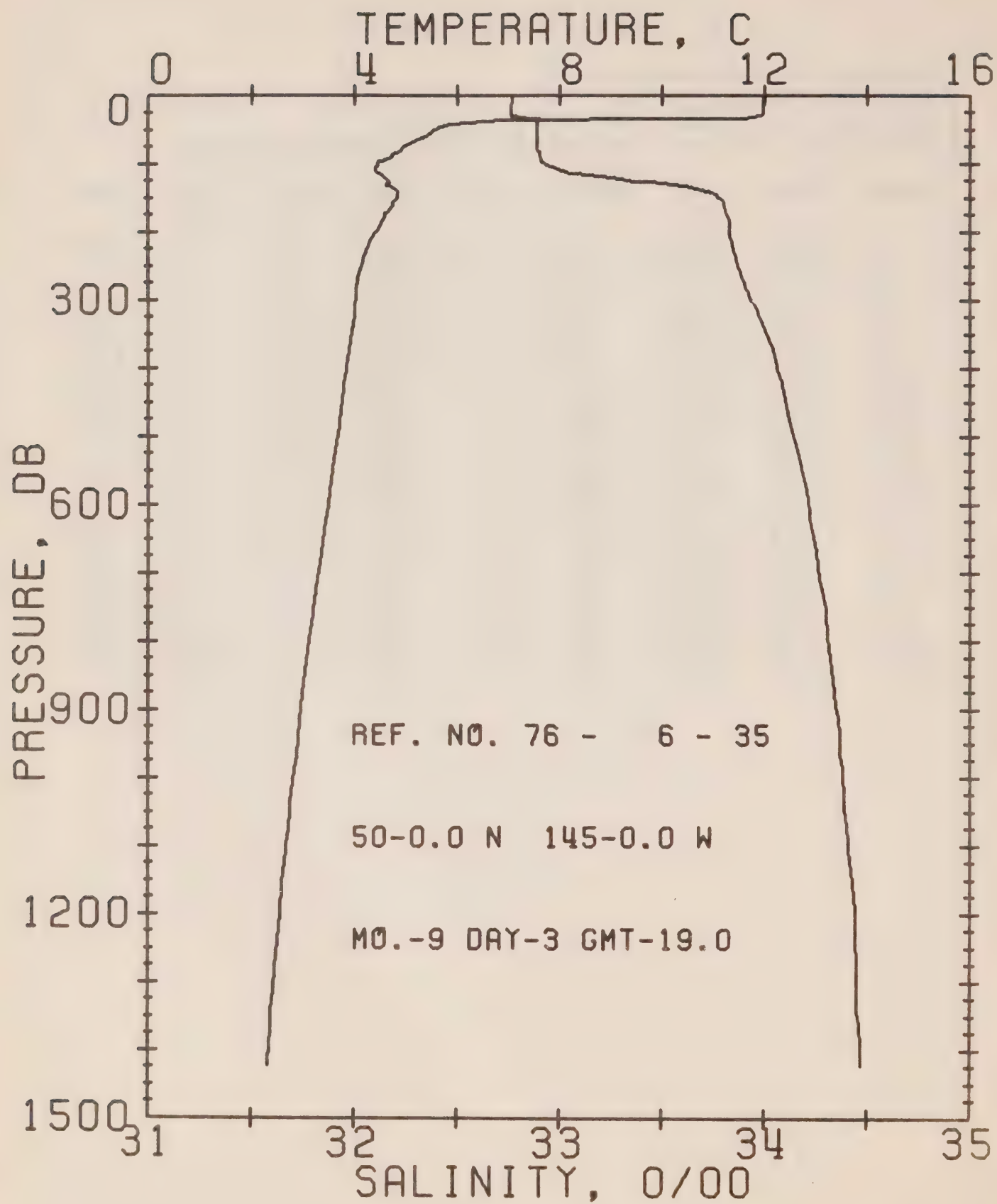
POSITION 50- 0.0N, 145- 0.0W

GMT 17.5

RESULTS OF STP CAST

181 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.09	32.77	0	24.87	309.5	0.0	0.0	1495.
10	12.06	32.77	10	24.87	309.5	0.31	0.02	1495.
20	11.98	32.77	20	24.89	308.2	0.62	0.06	1495.
30	11.07	32.81	30	25.08	289.6	0.92	0.14	1492.
50	5.74	32.89	50	25.94	207.8	1.36	0.32	1472.
75	5.33	32.88	75	25.99	203.9	1.88	0.65	1471.
100	4.77	32.95	99	26.10	193.3	2.38	1.09	1469.
125	4.79	33.45	124	26.50	156.0	2.82	1.60	1470.
150	4.92	33.78	149	26.75	132.5	3.17	2.09	1472.
175	4.59	33.81	174	26.81	126.9	3.49	2.62	1471.
200	4.37	33.83	199	26.84	123.8	3.81	3.22	1470.
225	4.23	33.86	223	26.88	120.6	4.11	3.88	1470.
250	4.17	33.88	248	26.90	118.3	4.41	4.60	1470.
300	4.01	33.94	298	26.97	112.6	4.96	6.21	1470.
400	3.86	34.05	397	27.07	103.4	6.06	10.03	1472.
500	3.71	34.14	496	27.16	96.1	7.05	14.59	1473.
600	3.50	34.21	595	27.23	89.3	7.98	19.76	1473.
800	3.12	34.32	793	27.35	78.9	9.65	31.66	1475.
1000	2.81	34.38	990	27.43	72.2	11.16	45.48	1477.
1200	2.58	34.43	1188	27.49	67.0	12.55	61.03	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 35

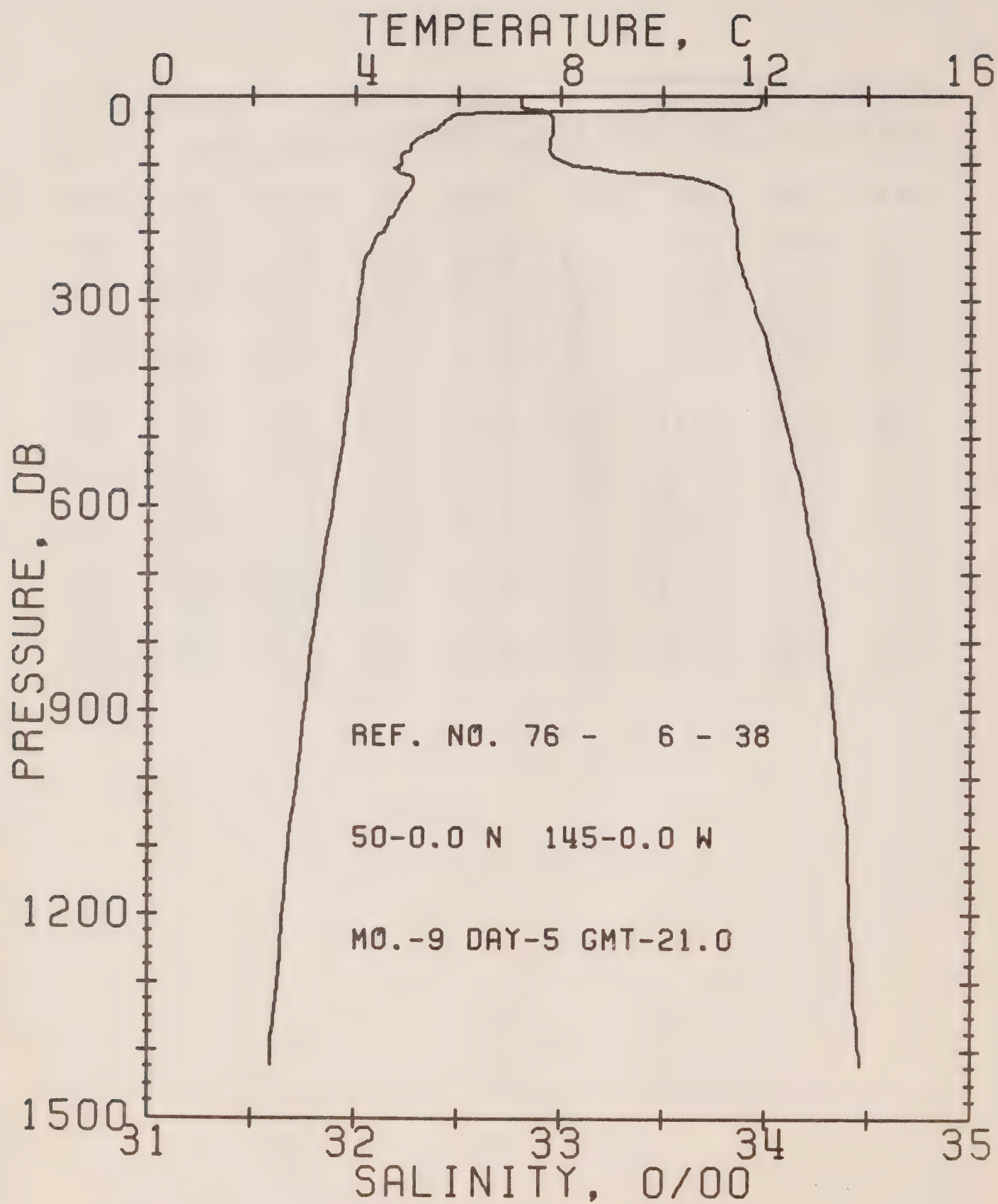
DATE 3/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.0

RESULTS OF STP CAST 155 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.99	32.77	0	24.88	307.7	0.0	0.0	1495.
10	11.97	32.77	10	24.89	307.8	0.31	0.02	1495.
20	11.98	32.76	20	24.88	309.0	0.62	0.06	1495.
30	11.94	32.76	30	24.89	308.5	0.93	0.14	1495.
50	5.58	32.89	50	25.96	205.9	1.39	0.33	1471.
75	4.95	32.89	75	26.03	199.2	1.90	0.65	1469.
100	4.44	32.92	99	26.12	191.6	2.39	1.09	1468.
125	4.65	33.37	124	26.45	160.5	2.84	1.60	1469.
150	4.82	33.78	149	26.75	132.0	3.19	2.09	1471.
175	4.58	33.81	174	26.81	127.0	3.52	2.63	1471.
200	4.41	33.83	199	26.84	124.2	3.83	3.23	1470.
225	4.22	33.85	223	26.87	121.1	4.14	3.89	1470.
250	4.12	33.87	248	26.90	118.6	4.44	4.62	1470.
300	4.03	33.93	298	26.96	113.6	5.02	6.24	1470.
400	3.84	34.06	397	27.08	102.6	6.09	10.05	1471.
500	3.67	34.14	496	27.16	95.3	7.08	14.58	1472.
600	3.48	34.22	595	27.24	88.8	7.99	19.72	1473.
800	3.10	34.31	793	27.35	79.0	9.67	31.64	1475.
1000	2.82	34.38	990	27.43	72.0	11.17	45.42	1477.
1200	2.56	34.44	1188	27.50	66.0	12.55	60.86	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 38

DATE 5/ 9/76

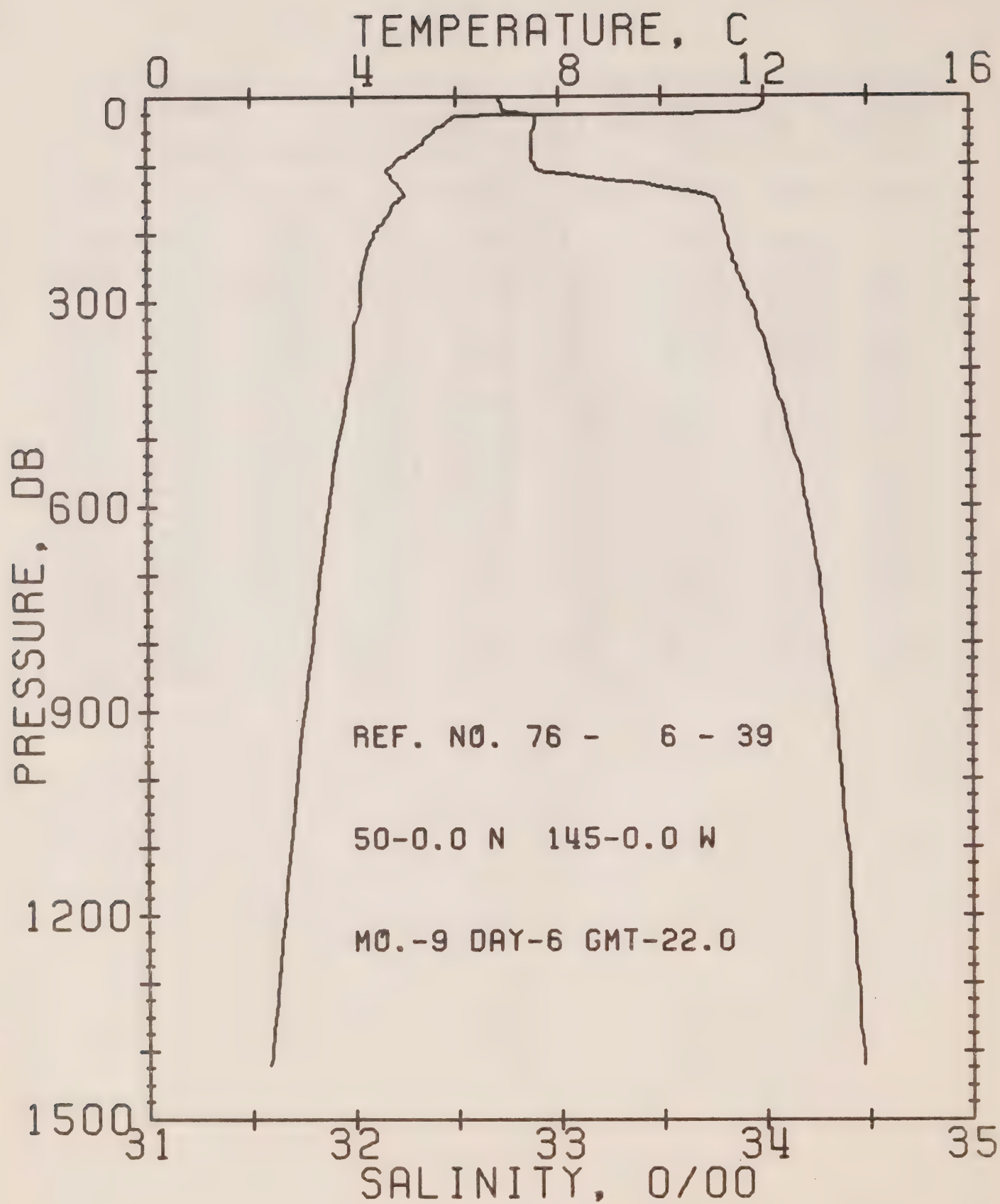
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 21.0

RESULTS OF STP CAST 190 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.91	32.81	0	24.93	303.3	0.0	0.0	1494.
10	11.90	32.81	10	24.93	303.7	0.30	0.02	1495.
20	11.59	32.84	20	25.01	296.2	0.61	0.06	1494.
30	5.83	32.96	30	25.99	203.3	0.83	0.12	1472.
50	5.55	32.96	50	26.02	200.3	1.23	0.28	1471.
75	5.06	32.95	75	26.07	195.9	1.73	0.60	1470.
100	4.88	33.04	99	26.16	187.4	2.21	1.03	1470.
125	5.12	33.69	124	26.65	141.7	2.62	1.50	1472.
150	4.92	33.83	149	26.78	129.1	2.96	1.96	1472.
175	4.73	33.84	174	26.81	126.6	3.28	2.49	1471.
200	4.54	33.86	199	26.85	123.2	3.59	3.09	1471.
225	4.28	33.86	223	26.88	120.6	3.89	3.75	1470.
250	4.15	33.88	248	26.91	118.1	4.19	4.47	1470.
300	4.06	33.93	298	26.95	113.8	4.77	6.09	1471.
400	3.90	34.04	397	27.05	105.1	5.86	9.98	1472.
500	3.77	34.12	496	27.13	98.3	6.88	14.64	1473.
600	3.57	34.19	595	27.21	91.5	7.83	19.95	1474.
800	3.17	34.30	793	27.34	80.6	9.54	32.11	1475.
1000	2.88	34.37	990	27.42	73.8	11.08	46.27	1478.
1200	2.60	34.41	1188	27.47	68.8	12.49	62.08	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 39

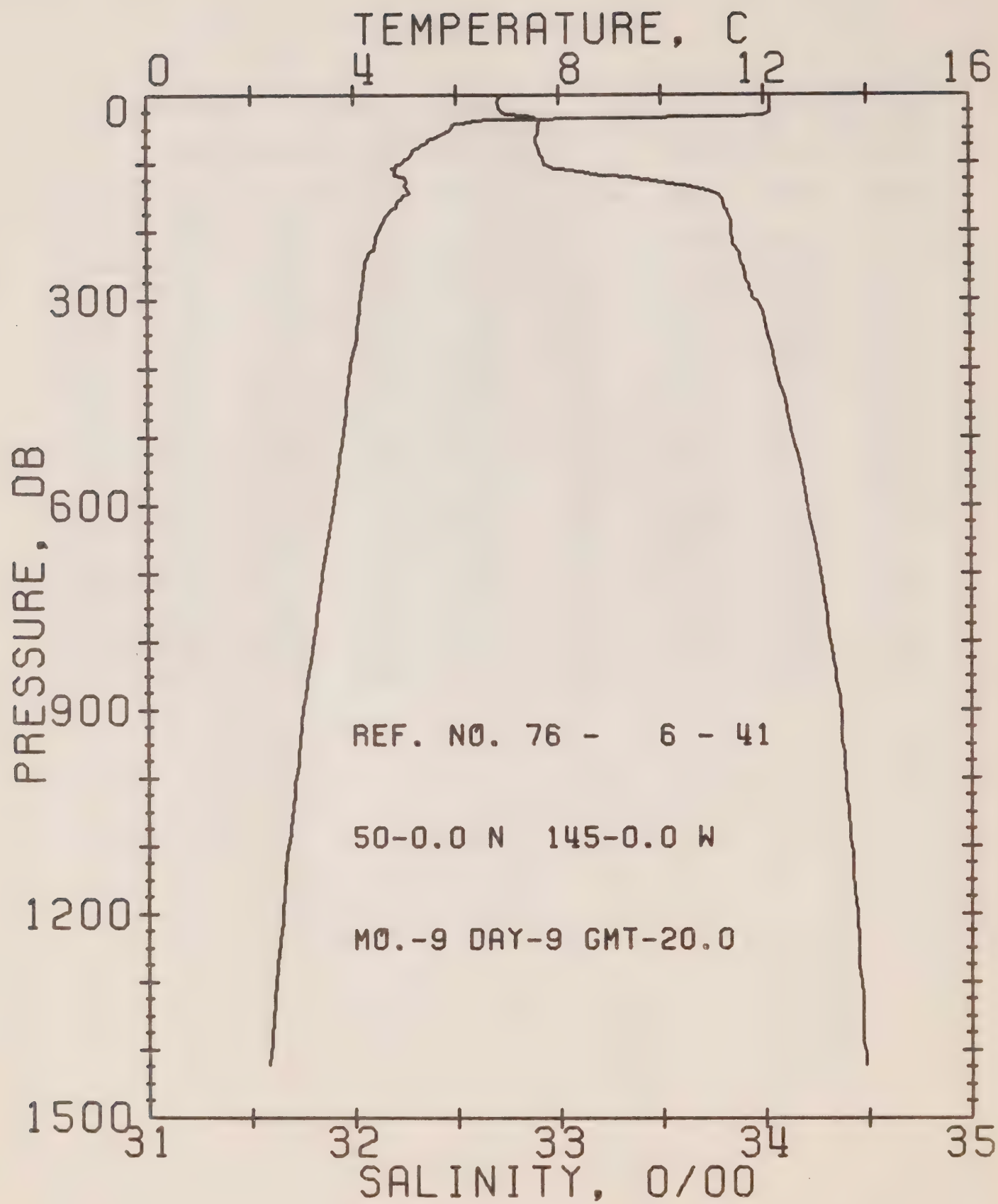
DATE 6/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 22.0

RESULTS OF STP CAST 183 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.99	32.72	0	24.85	311.4	0.0	0.0	1495.
10	11.98	32.72	10	24.85	311.9	0.31	0.02	1495.
20	11.87	32.73	20	24.88	309.2	0.62	0.06	1494.
30	5.97	32.89	30	25.92	210.2	0.88	0.13	1473.
50	5.57	32.88	50	25.95	206.8	1.30	0.30	1471.
75	5.20	32.87	75	25.99	203.4	1.82	0.63	1470.
100	4.78	32.88	99	26.05	198.4	2.32	1.07	1469.
125	4.81	33.35	124	26.41	163.7	2.78	1.60	1470.
150	4.91	33.75	149	26.72	134.6	3.15	2.12	1471.
175	4.65	33.80	174	26.79	128.9	3.48	2.66	1471.
200	4.40	33.81	199	26.82	125.4	3.80	3.27	1470.
225	4.27	33.83	223	26.86	122.5	4.11	3.94	1470.
250	4.18	33.87	248	26.89	119.4	4.41	4.67	1470.
300	4.12	33.93	298	26.95	114.6	4.99	6.31	1471.
400	3.96	34.04	397	27.05	105.6	6.09	10.21	1472.
500	3.69	34.12	496	27.14	97.3	7.10	14.86	1473.
600	3.50	34.20	595	27.23	90.1	8.04	20.09	1473.
800	3.18	34.29	793	27.33	81.2	9.74	32.21	1475.
1000	2.87	34.36	990	27.41	74.0	11.29	46.35	1478.
1200	2.62	34.41	1188	27.48	68.6	12.71	62.31	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 41

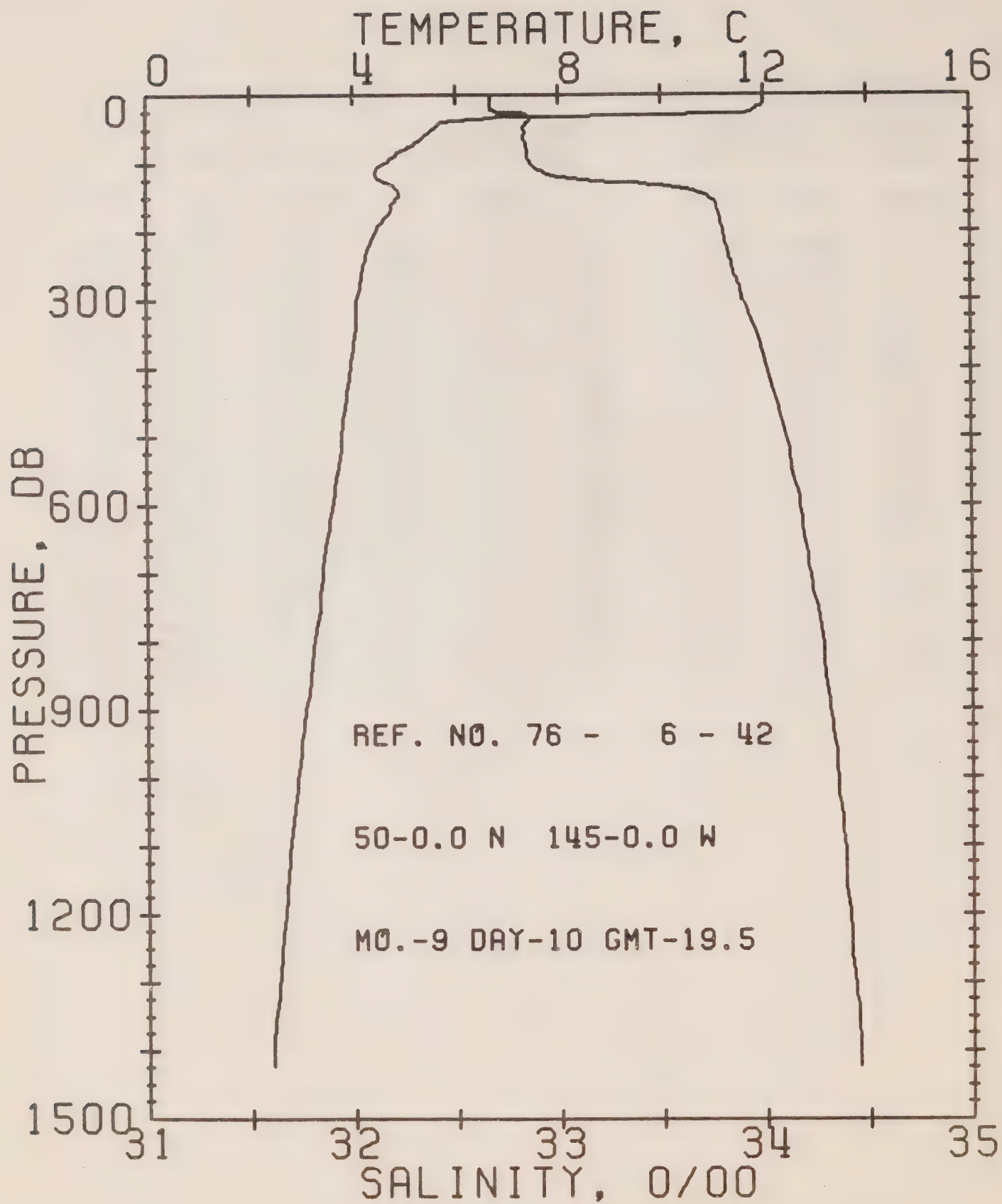
DATE 9/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 20.0

RESULTS OF STP CAST 184 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.14	32.72	0	24.82	314.1	0.0	0.0	1495.
10	12.14	32.70	10	24.80	315.8	0.31	0.02	1495.
20	12.14	32.71	20	24.81	315.5	0.63	0.06	1495.
30	12.02	32.80	30	24.90	306.9	0.94	0.14	1495.
50	5.89	32.90	50	25.93	208.8	1.40	0.33	1473.
75	5.31	32.89	75	26.00	202.8	1.92	0.66	1471.
100	4.95	32.93	99	26.06	196.6	2.42	1.10	1470.
125	5.01	33.45	124	26.47	158.4	2.87	1.62	1471.
150	4.95	33.79	149	26.75	132.5	3.23	2.12	1472.
175	4.66	33.82	174	26.81	127.0	3.55	2.65	1471.
200	4.48	33.84	199	26.84	124.1	3.87	3.25	1471.
225	4.38	33.86	223	26.87	121.6	4.17	3.92	1471.
250	4.22	33.89	248	26.91	117.8	4.47	4.64	1470.
300	4.12	33.95	298	26.97	112.6	5.05	6.26	1471.
400	3.91	34.05	397	27.07	103.9	6.12	10.09	1472.
500	3.77	34.13	496	27.15	97.2	7.13	14.68	1473.
600	3.58	34.21	595	27.22	90.6	8.06	19.92	1474.
800	3.19	34.31	793	27.34	79.9	9.76	31.99	1476.
1000	2.85	34.39	990	27.43	72.0	11.26	45.77	1478.
1200	2.60	34.44	1188	27.50	66.5	12.65	61.25	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 42

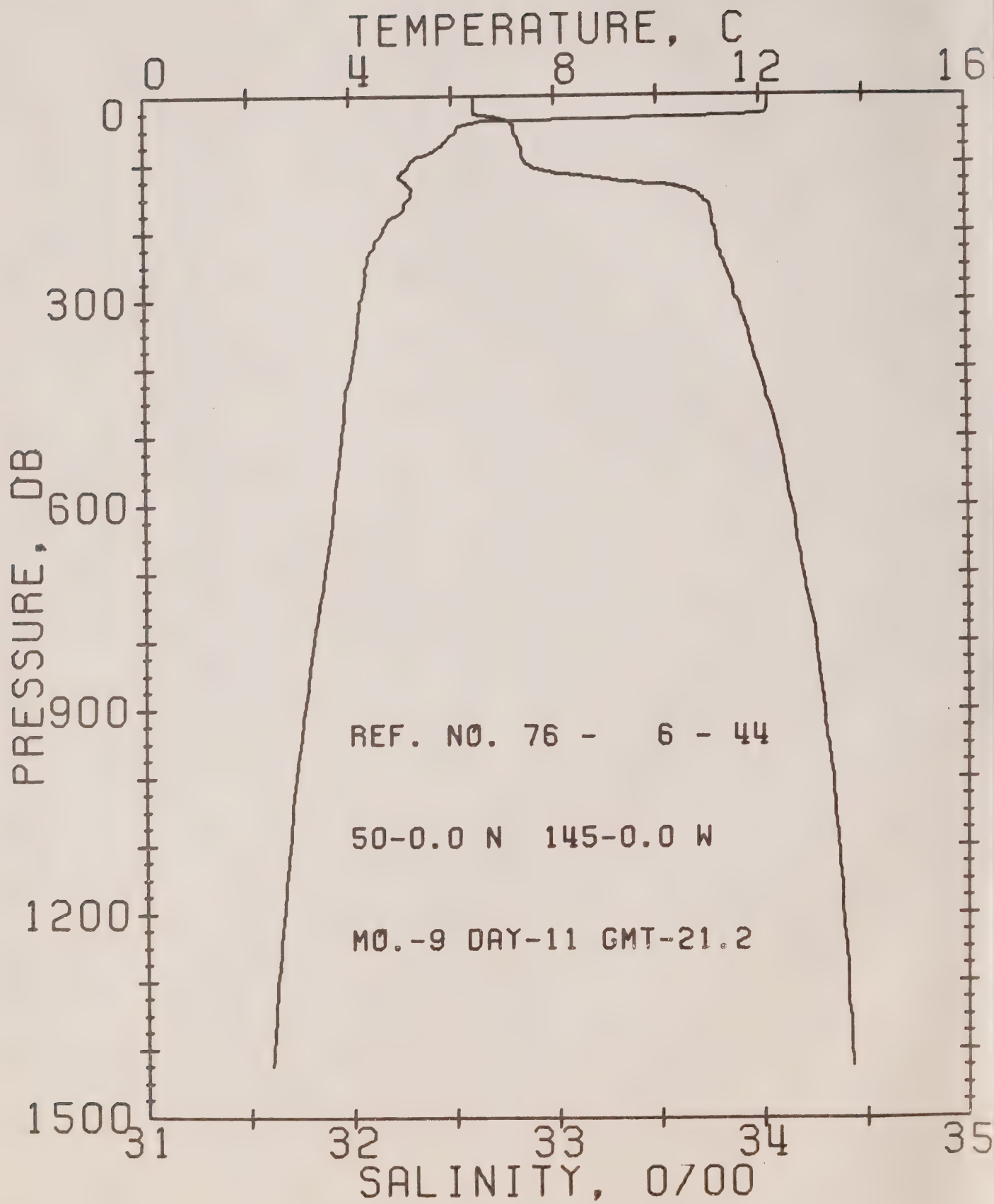
DATE 10/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.5

RESULTS OF STP CAST 187 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.99	32.68	0	24.81	314.3	0.0	0.0	1495.
10	12.00	32.67	10	24.81	315.8	0.32	0.02	1495.
20	11.85	32.67	20	24.83	313.2	0.63	0.06	1494.
30	10.27	32.85	30	25.25	273.5	0.93	0.14	1489.
50	5.57	32.83	50	25.92	210.3	1.37	0.32	1471.
75	5.11	32.84	75	25.98	204.7	1.89	0.65	1470.
100	4.64	32.86	99	26.04	198.4	2.39	1.10	1468.
125	4.54	33.15	124	26.29	175.8	2.87	1.64	1469.
150	4.89	33.73	149	26.71	136.3	3.24	2.16	1471.
175	4.68	33.78	174	26.77	130.7	3.57	2.71	1471.
200	4.44	33.80	199	26.81	126.6	3.89	3.32	1470.
225	4.27	33.82	223	26.84	123.9	4.21	4.00	1470.
250	4.20	33.84	248	26.87	121.6	4.51	4.74	1470.
300	4.06	33.89	298	26.92	116.8	5.11	6.41	1471.
400	3.94	34.01	397	27.03	107.7	6.23	10.39	1472.
500	3.76	34.10	496	27.12	99.6	7.26	15.13	1473.
600	3.59	34.17	595	27.19	93.4	8.23	20.53	1474.
800	3.21	34.28	793	27.31	82.8	9.99	33.09	1476.
1000	2.89	34.35	990	27.40	75.2	11.58	47.59	1478.
1200	2.65	34.40	1188	27.46	70.0	13.03	63.83	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 44

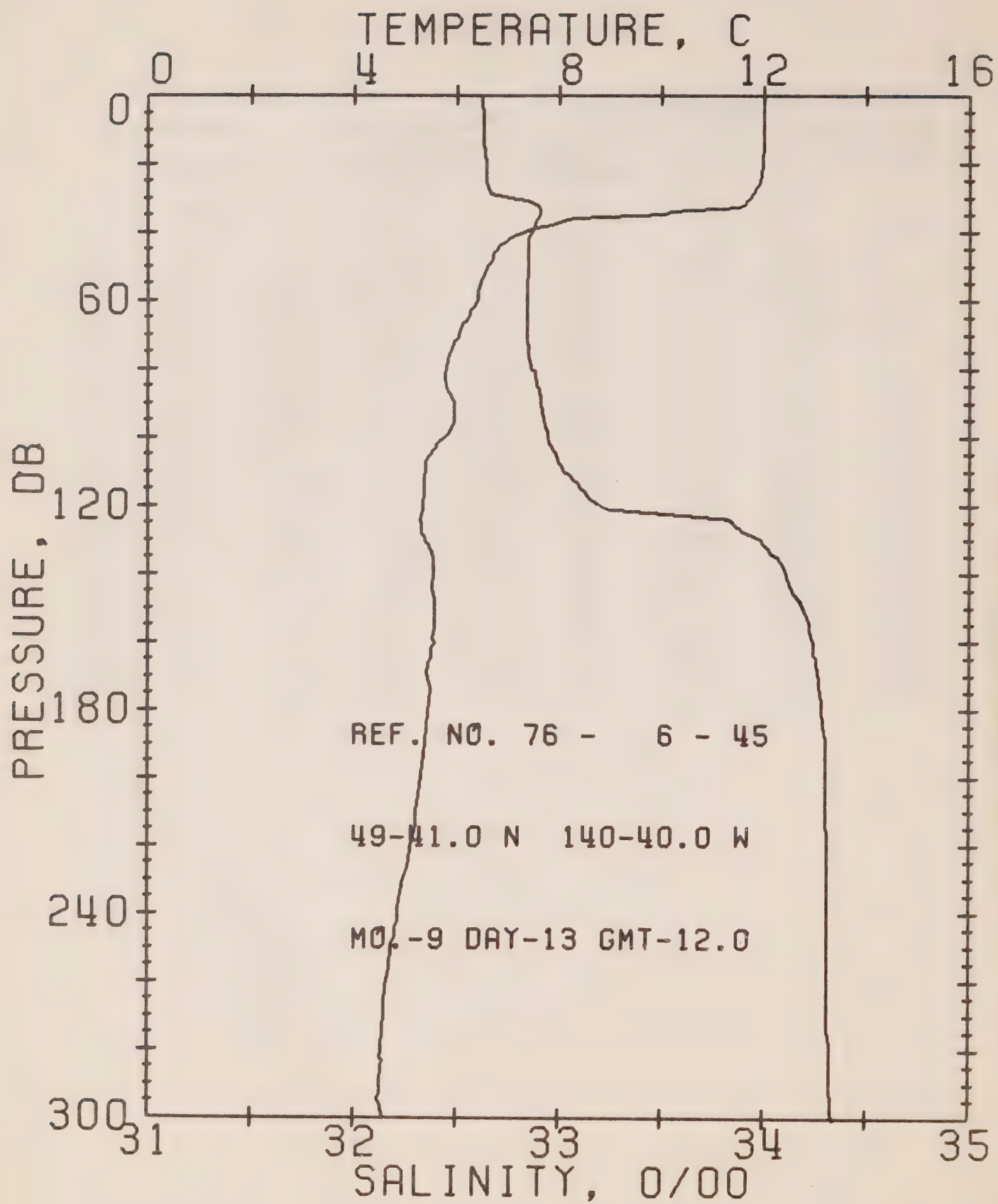
DATE 11/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.2

RESULTS OF STP CAST 187 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.19	32.61	0	24.72	323.1	0.0	0.0	1495.
10	12.16	32.61	10	24.73	323.0	0.32	0.02	1495.
20	12.17	32.61	20	24.73	323.4	0.65	0.07	1495.
30	11.57	32.69	30	24.90	307.1	0.97	0.15	1494.
50	6.09	32.80	50	25.83	218.6	1.44	0.34	1473.
75	5.76	32.84	75	25.90	212.2	1.98	0.68	1472.
100	5.18	32.86	99	25.99	203.8	2.50	1.15	1471.
125	5.06	33.33	124	26.37	167.9	2.98	1.69	1471.
150	5.18	33.72	149	26.66	140.6	3.35	2.21	1473.
175	4.92	33.76	174	26.73	134.7	3.69	2.78	1472.
200	4.63	33.78	199	26.78	130.1	4.02	3.41	1471.
225	4.45	33.79	223	26.81	127.5	4.34	4.10	1471.
250	4.32	33.83	248	26.85	123.7	4.66	4.86	1471.
300	4.20	33.89	298	26.91	118.0	5.26	6.56	1471.
400	4.02	33.99	397	27.00	110.1	6.41	10.63	1472.
500	3.82	34.08	496	27.10	101.7	7.46	15.46	1473.
600	3.65	34.14	595	27.17	95.9	8.45	20.98	1474.
800	3.25	34.26	793	27.29	84.8	10.26	33.84	1476.
1000	2.90	34.34	990	27.39	76.0	11.86	48.58	1478.
1200	2.65	34.38	1188	27.45	71.2	13.34	65.05	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 45

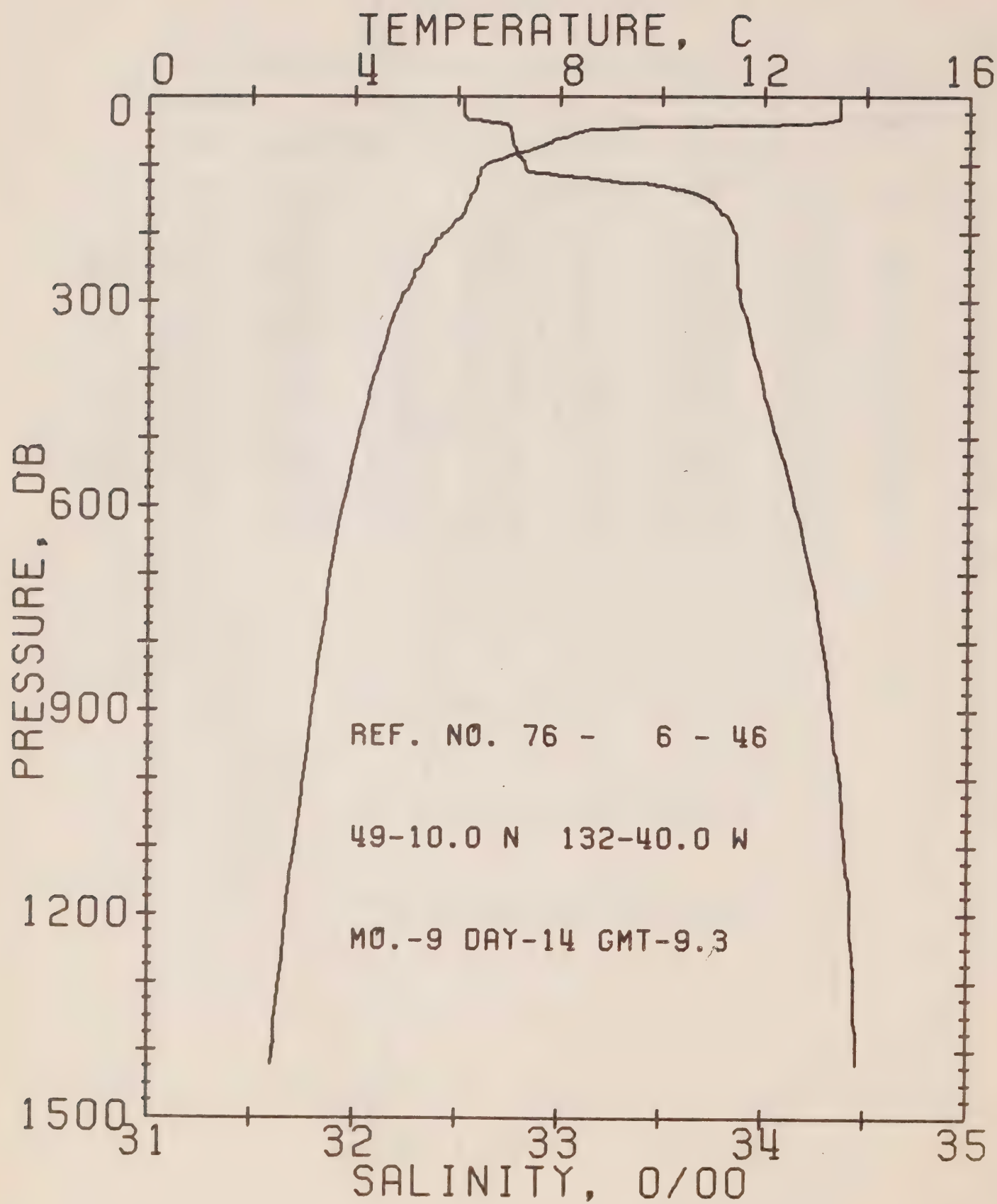
DATE 13/ 9/76

STATION 11

POSITION 49-41.0N, 140-40.0W GMT 12.0

RESULTS OF STP CAST 156 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.99	32.62	0	24.77	318.8	0.0	0.0	1494.
10	11.99	32.63	10	24.78	318.5	0.32	0.02	1495.
20	11.97	32.64	20	24.79	317.6	0.64	0.06	1495.
30	11.74	32.76	30	24.92	304.9	0.95	0.15	1494.
50	6.59	32.85	50	25.81	221.0	1.44	0.34	1475.
75	5.86	32.85	75	25.90	212.4	1.98	0.69	1473.
100	5.76	32.94	99	25.98	204.8	2.51	1.15	1473.
125	5.30	33.85	124	26.75	131.7	2.97	1.68	1473.
150	5.56	34.19	149	26.99	109.8	3.27	2.10	1475.
175	5.47	34.27	174	27.07	102.6	3.53	2.53	1475.
200	5.30	34.30	199	27.11	98.8	3.78	3.01	1475.
225	5.05	34.31	223	27.15	95.6	4.03	3.54	1474.
250	4.73	34.31	248	27.18	92.1	4.26	4.11	1473.
300	4.57	34.33	298	27.22	89.1	4.71	5.37	1473.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 46

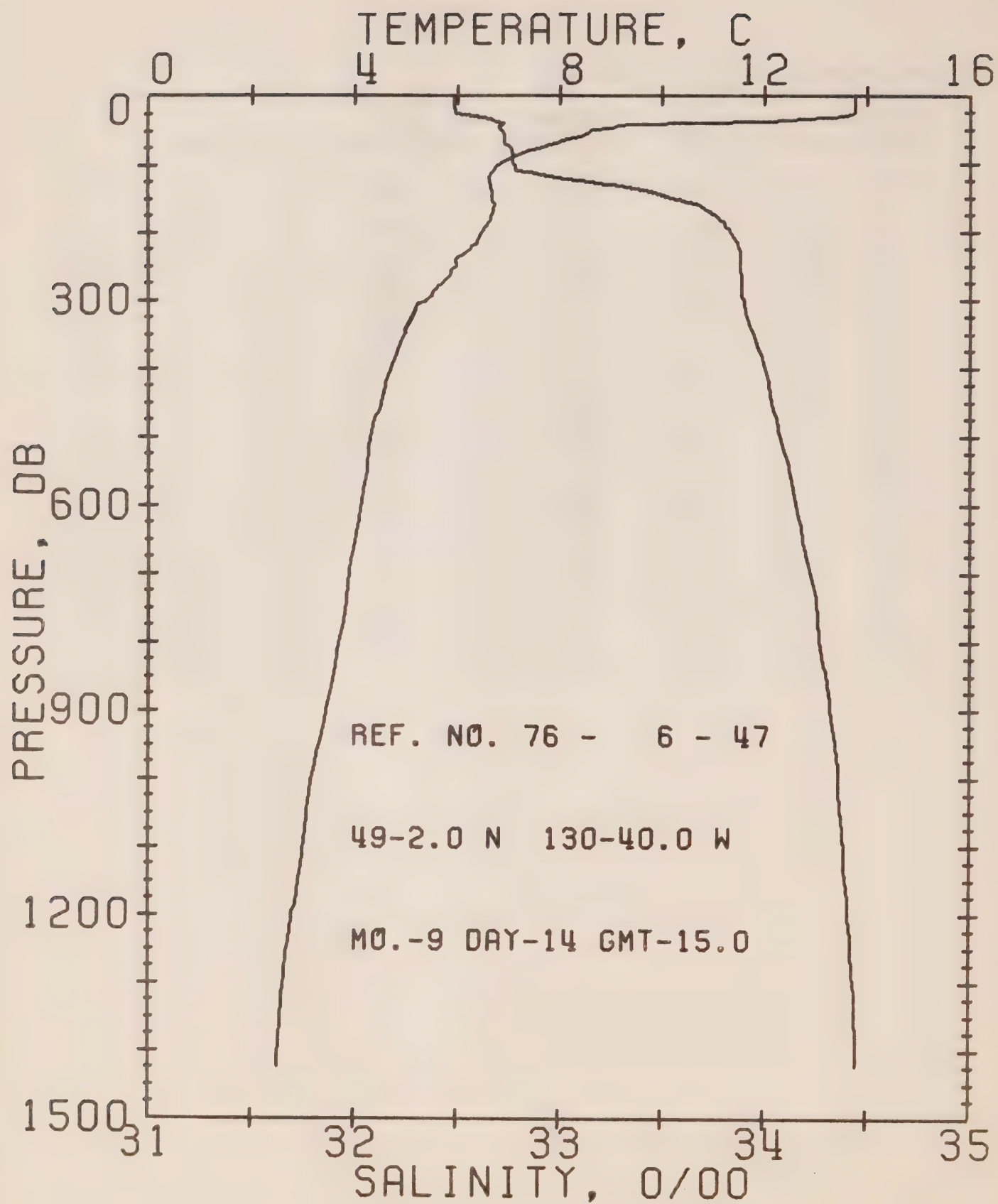
DATE 14/ 9/76

STATION 7

POSITION 49-10.0N, 132-40.0W GMT 9.3

RESULTS OF STP CAST 182 PCINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.46	32.53	0	24.41	352.6	0.0	0.0	1499.
10	13.46	32.53	10	24.41	353.0	0.35	0.02	1499.
20	13.46	32.53	20	24.41	353.3	0.71	0.07	1500.
30	13.46	32.53	30	24.42	353.1	1.06	0.16	1500.
50	8.49	32.75	50	25.46	253.9	1.69	0.41	1483.
75	7.57	32.77	75	25.61	239.7	2.30	0.81	1480.
100	6.54	32.82	99	25.79	223.2	2.88	1.32	1476.
125	6.36	33.31	124	26.20	184.6	3.41	1.92	1476.
150	6.22	33.72	149	26.54	153.0	3.82	2.50	1477.
175	6.07	33.81	174	26.63	144.6	4.19	3.11	1477.
200	5.74	33.85	199	26.70	137.4	4.54	3.78	1476.
225	5.47	33.86	223	26.74	134.1	4.88	4.52	1475.
250	5.26	33.87	248	26.77	131.1	5.21	5.32	1475.
300	4.88	33.88	298	26.83	126.5	5.86	7.12	1474.
400	4.41	33.98	397	26.95	115.0	7.06	11.40	1474.
500	4.06	34.06	496	27.06	105.6	8.16	16.47	1474.
600	3.76	34.15	595	27.16	96.6	9.17	22.11	1474.
800	3.35	34.29	793	27.31	83.2	10.95	34.79	1476.
1000	3.01	34.37	990	27.41	74.6	12.54	49.26	1478.
1200	2.68	34.43	1188	27.48	68.1	13.96	65.25	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 47

DATE 14/ 9/76

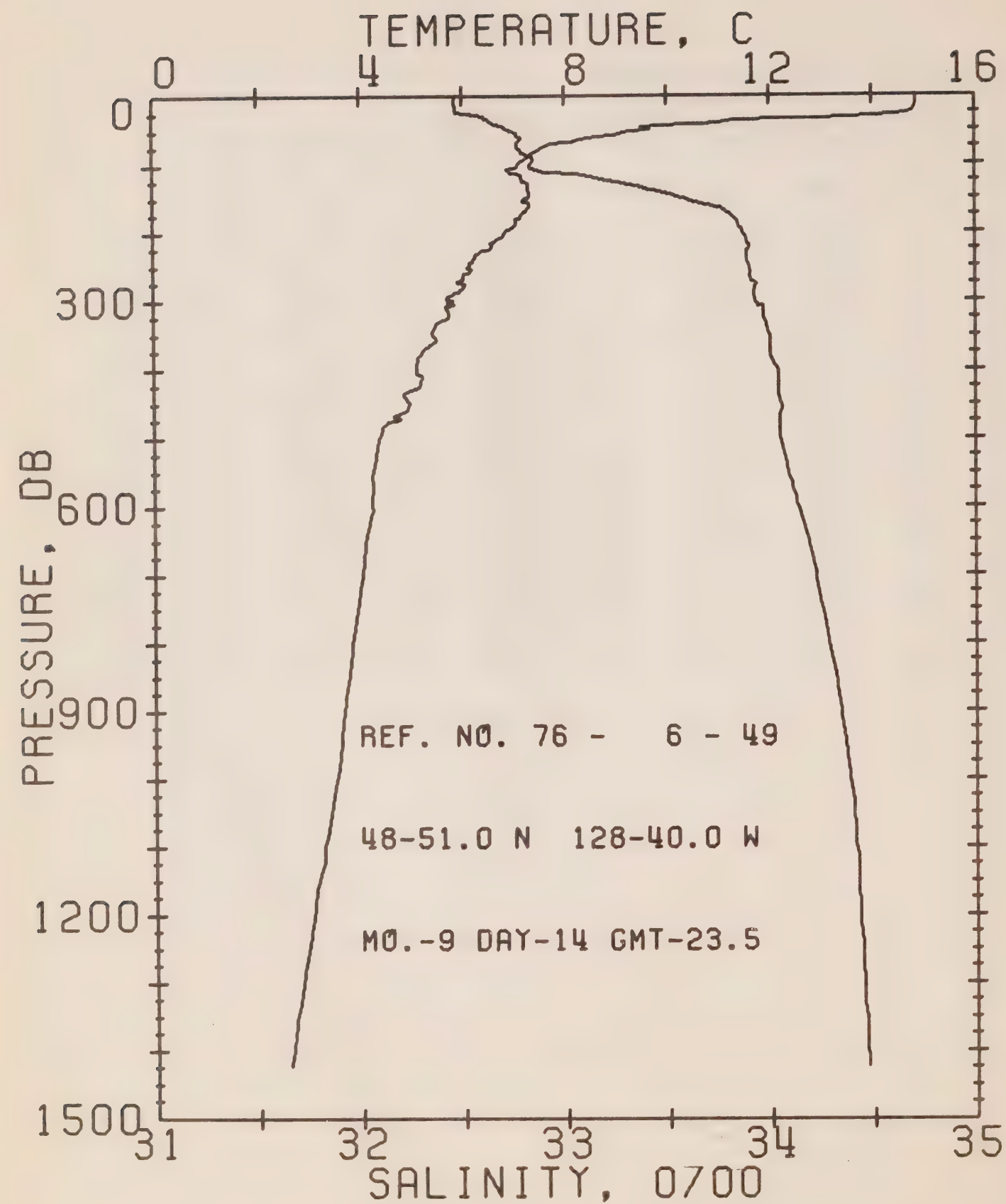
STATION 6

POSITION 49- 2.0N, 130-40.0W

GMT 15.0

RESULTS OF STP CAST 170 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.76	32.48	0	24.31	362.0	0.0	0.0	1500.
10	13.76	32.48	10	24.32	362.4	0.36	0.02	1500.
20	13.76	32.48	20	24.32	362.4	0.72	0.07	1501.
30	13.63	32.56	30	24.40	354.7	1.09	0.17	1500.
50	8.62	32.71	50	25.41	258.8	1.69	0.41	1483.
75	7.69	32.75	75	25.58	243.0	2.32	0.81	1480.
100	6.86	32.77	99	25.71	230.9	2.91	1.33	1477.
125	6.62	33.12	124	26.01	202.1	3.46	1.97	1477.
150	6.66	33.54	149	26.34	171.7	3.92	2.61	1478.
175	6.66	33.75	174	26.50	156.3	4.33	3.28	1479.
200	6.47	33.83	199	26.59	148.2	4.71	4.01	1479.
225	6.23	33.87	223	26.66	142.3	5.07	4.79	1478.
250	5.98	33.88	248	26.70	139.0	5.42	5.64	1478.
300	5.40	33.90	298	26.78	131.1	6.10	7.53	1476.
400	4.70	34.00	397	26.94	116.7	7.33	11.93	1475.
500	4.30	34.08	496	27.05	107.1	8.45	17.05	1475.
600	4.12	34.16	595	27.13	100.2	9.48	22.85	1476.
800	3.69	34.27	793	27.26	88.4	11.36	36.19	1478.
1000	3.16	34.36	991	27.38	77.4	13.01	51.30	1479.
1200	2.78	34.41	1188	27.46	70.6	14.50	67.95	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 49

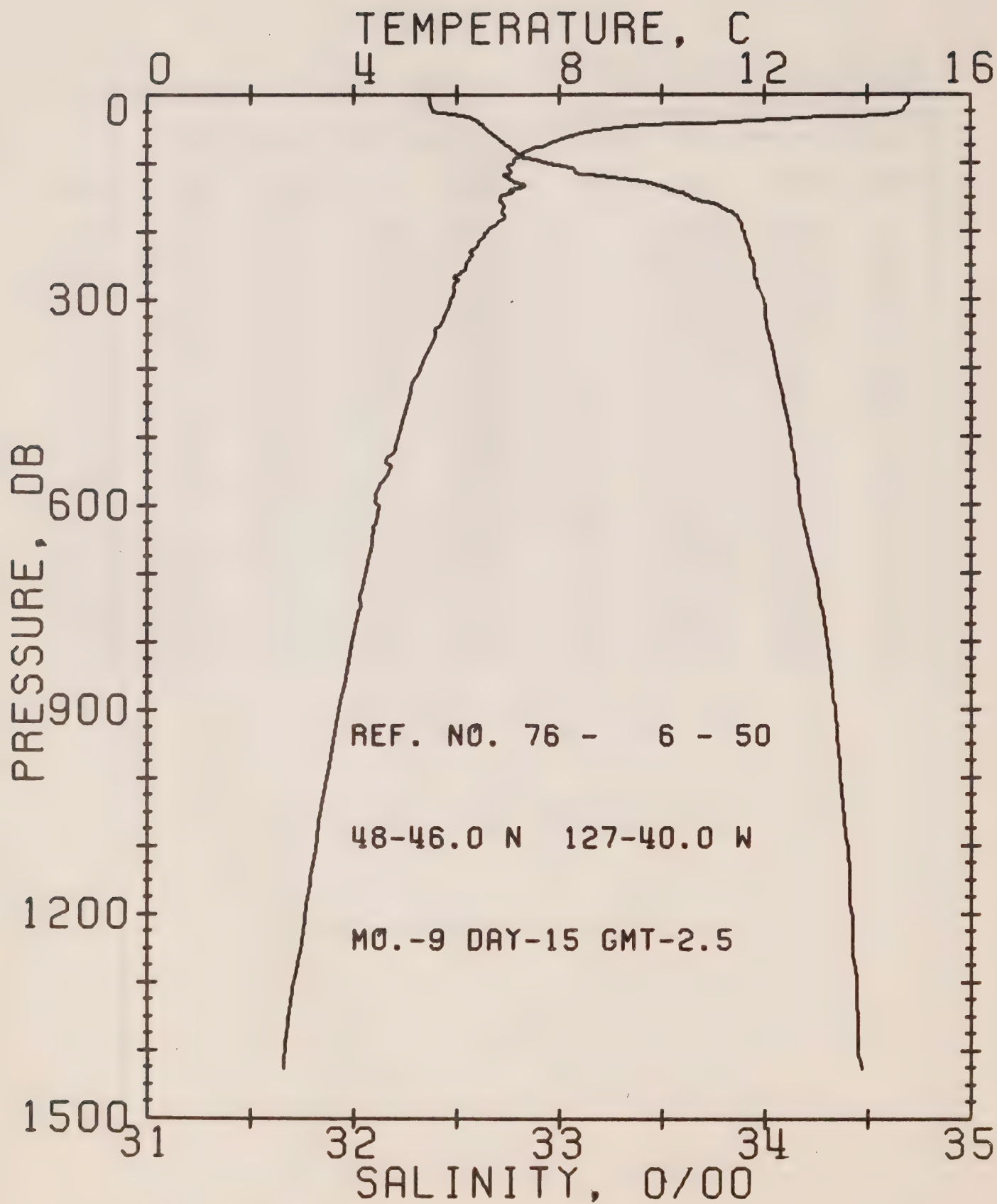
DATE 14/ 9/76

STATION 5

POSITION 48-51.0N, 128-40.0W GMT 23.5

RESULTS OF STP CAST 222 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	14.84	32.47	0	24.08	384.2	0.0	0.0	1504.
10	14.84	32.46	10	24.07	385.3	0.38	0.02	1504.
20	14.80	32.47	20	24.09	384.3	0.77	0.08	1504.
30	14.06	32.60	30	24.35	360.0	1.15	0.17	1502.
50	9.67	32.73	50	25.26	273.2	1.76	0.42	1487.
75	7.58	32.77	75	25.61	240.1	2.39	0.82	1480.
100	7.09	32.84	99	25.73	228.8	2.98	1.34	1478.
125	7.17	33.23	124	26.03	201.1	3.52	1.96	1479.
150	7.27	33.57	149	26.28	177.5	3.99	2.63	1481.
175	7.14	33.81	174	26.49	158.1	4.41	3.32	1481.
200	6.84	33.87	199	26.57	150.4	4.80	4.05	1480.
225	6.51	33.90	224	26.64	144.0	5.16	4.85	1479.
250	6.13	33.90	248	26.69	139.5	5.52	5.70	1478.
300	5.81	33.93	298	26.76	133.8	6.20	7.61	1478.
400	5.10	34.03	397	26.92	118.7	7.45	12.08	1477.
500	4.36	34.05	496	27.02	109.9	8.60	17.35	1475.
600	4.22	34.13	595	27.10	103.0	9.67	23.30	1476.
800	3.82	34.28	793	27.26	89.3	11.58	36.88	1478.
1000	3.50	34.38	991	27.37	79.7	13.26	52.27	1480.
1200	3.05	34.43	1188	27.45	72.2	14.77	69.18	1482.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 50

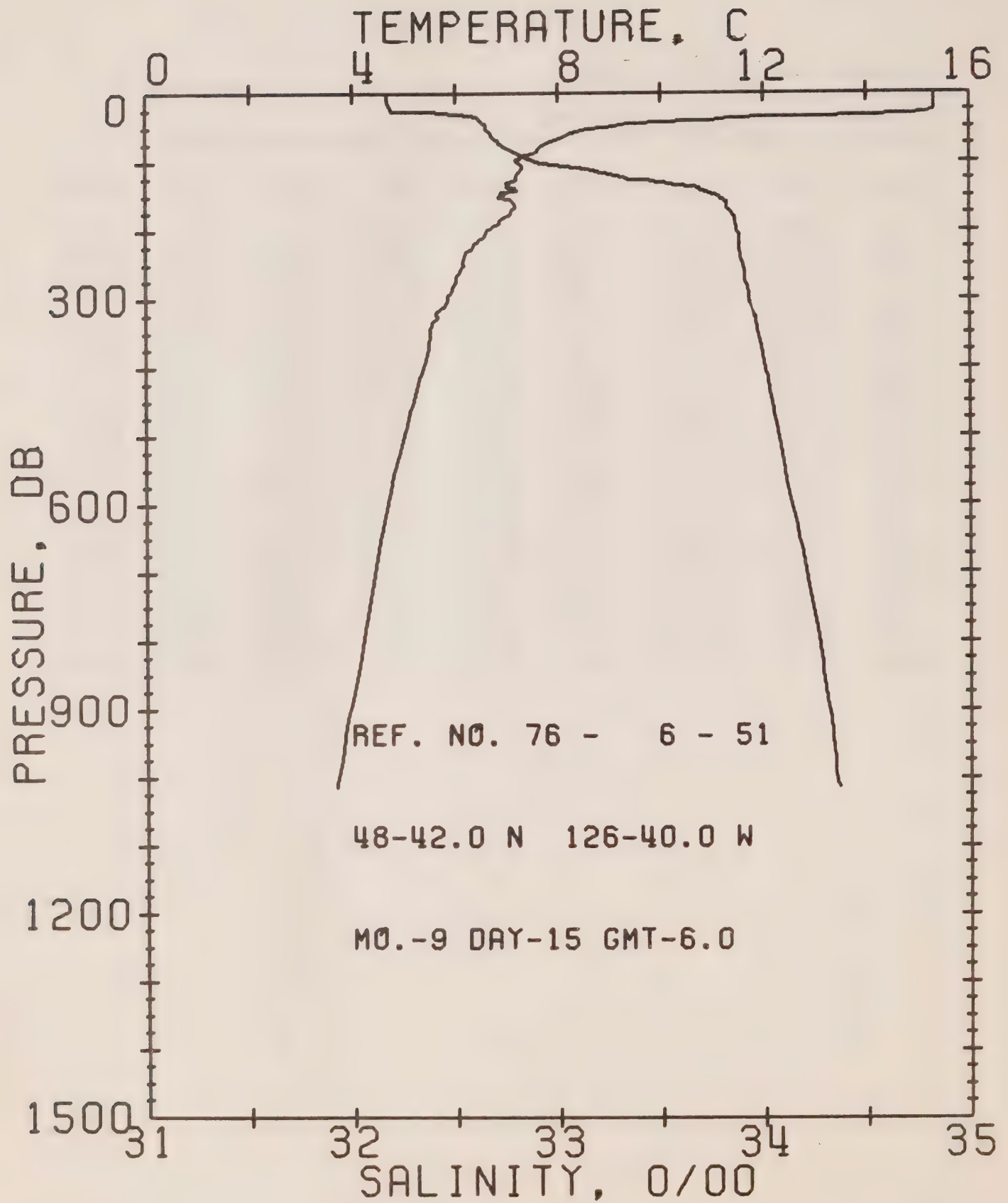
DATE 15/ 9/76

STATION 4

POSITION 48-46.0N, 127-40.0W GMT 2.5

RESULTS OF STP CAST 191 POINTS TAKEN FROM ANALCG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.79	32.36	0	24.01	391.2	0.0	0.0	1503.
10	14.79	32.37	10	24.02	390.9	0.39	0.02	1504.
20	14.71	32.38	20	24.04	389.0	0.78	0.08	1504.
30	14.40	32.50	30	24.20	374.1	1.17	0.18	1503.
50	9.03	32.64	50	25.29	270.0	1.79	0.43	1485.
75	7.68	32.75	75	25.58	243.0	2.42	0.83	1480.
100	7.09	32.95	99	25.82	220.8	3.01	1.35	1478.
125	7.03	33.36	124	26.15	189.6	3.52	1.94	1479.
150	6.86	33.64	149	26.39	166.6	3.97	2.56	1479.
175	6.90	33.85	174	26.56	151.6	4.36	3.22	1480.
200	6.62	33.90	199	26.63	145.0	4.74	3.93	1479.
225	6.31	33.92	223	26.68	139.9	5.09	4.70	1479.
250	6.16	33.95	248	26.73	136.1	5.44	5.54	1478.
300	5.88	33.97	298	26.78	131.7	6.11	7.41	1478.
400	5.28	34.05	397	26.92	119.3	7.35	11.85	1477.
500	4.86	34.12	496	27.02	110.1	8.50	17.09	1477.
600	4.49	34.17	595	27.10	103.4	9.56	23.02	1478.
800	3.97	34.30	793	27.26	89.5	11.48	36.68	1479.
1000	3.47	34.36	991	27.36	80.8	13.17	52.20	1480.
1200	3.05	34.42	1188	27.44	73.2	14.71	69.36	1482.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 51

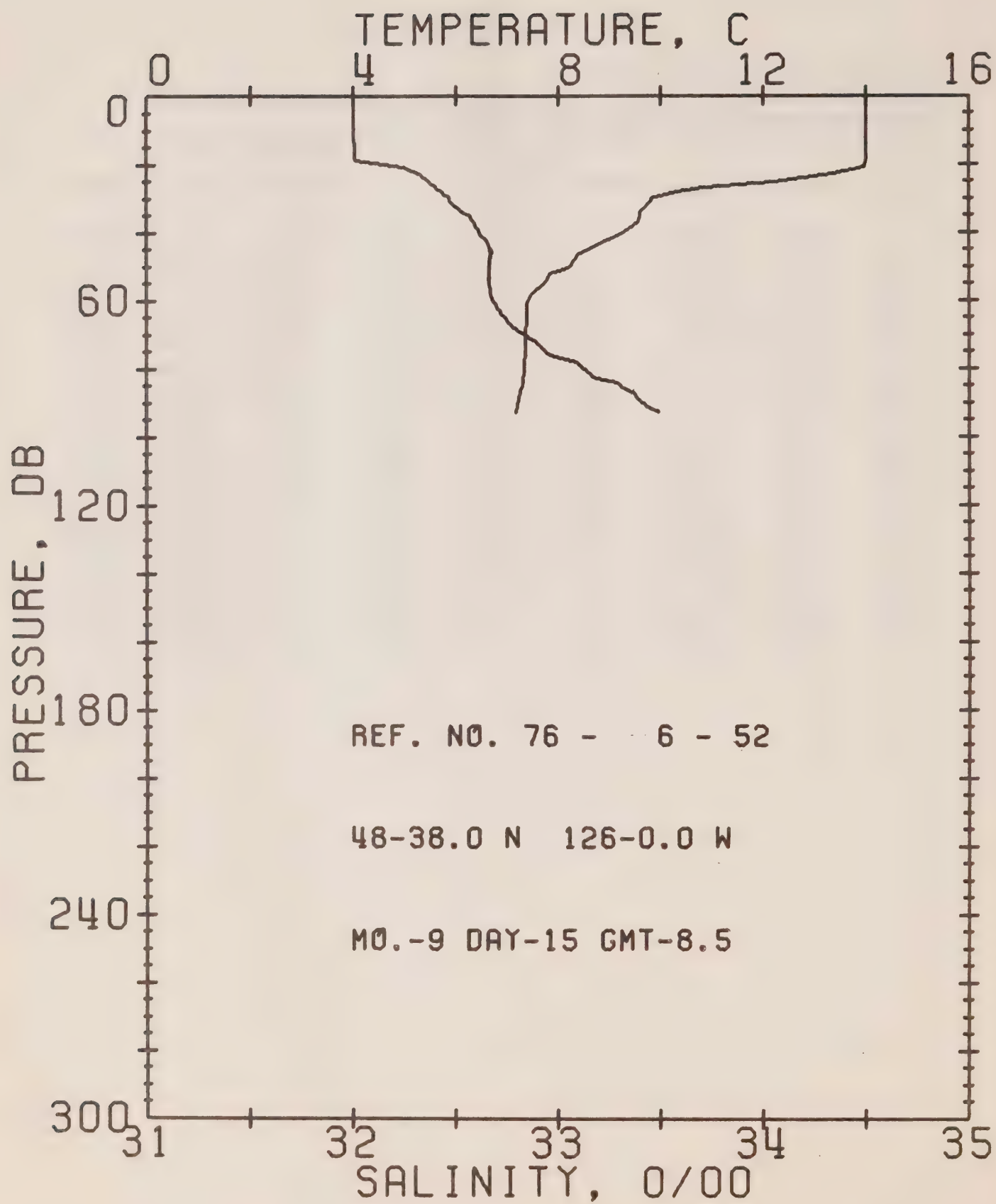
DATE 15/ 9/76

STATION 3

POSITION 48-42.0N, 126-40.0W GMT 6.0

RESULTS OF STP CAST 155 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.31	32.17	0	23.75	415.8	0.0	0.0	1505.
10	15.31	32.17	10	23.75	416.3	0.42	0.02	1505.
20	15.31	32.18	20	23.76	415.7	0.83	0.08	1505.
30	14.79	32.50	30	24.12	381.9	1.24	0.19	1504.
50	8.97	32.65	50	25.31	268.5	1.85	0.43	1484.
75	7.67	32.73	75	25.56	244.3	2.49	0.84	1480.
100	7.20	32.89	99	25.76	226.5	3.08	1.36	1479.
125	7.15	33.35	124	26.12	191.9	3.60	1.96	1480.
150	6.87	33.78	149	26.50	156.5	4.03	2.56	1479.
175	7.07	33.85	174	26.52	154.6	4.42	3.21	1481.
200	6.63	33.87	199	26.60	147.4	4.79	3.93	1479.
225	6.32	33.88	224	26.65	143.0	5.16	4.71	1479.
250	6.15	33.90	248	26.69	139.9	5.51	5.56	1478.
300	5.84	33.93	298	26.75	134.2	6.19	7.48	1478.
400	5.36	34.00	397	26.87	123.9	7.47	12.04	1478.
500	4.98	34.07	496	26.97	115.5	8.67	17.51	1478.
600	4.66	34.13	595	27.05	108.2	9.79	23.77	1478.
800	4.18	34.26	793	27.20	94.9	11.81	38.16	1480.
1000	3.68	34.35	991	27.32	84.4	13.60	54.52	1481.



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REFERENCE NO. 76- 6- 52

DATE 15/ 9/76

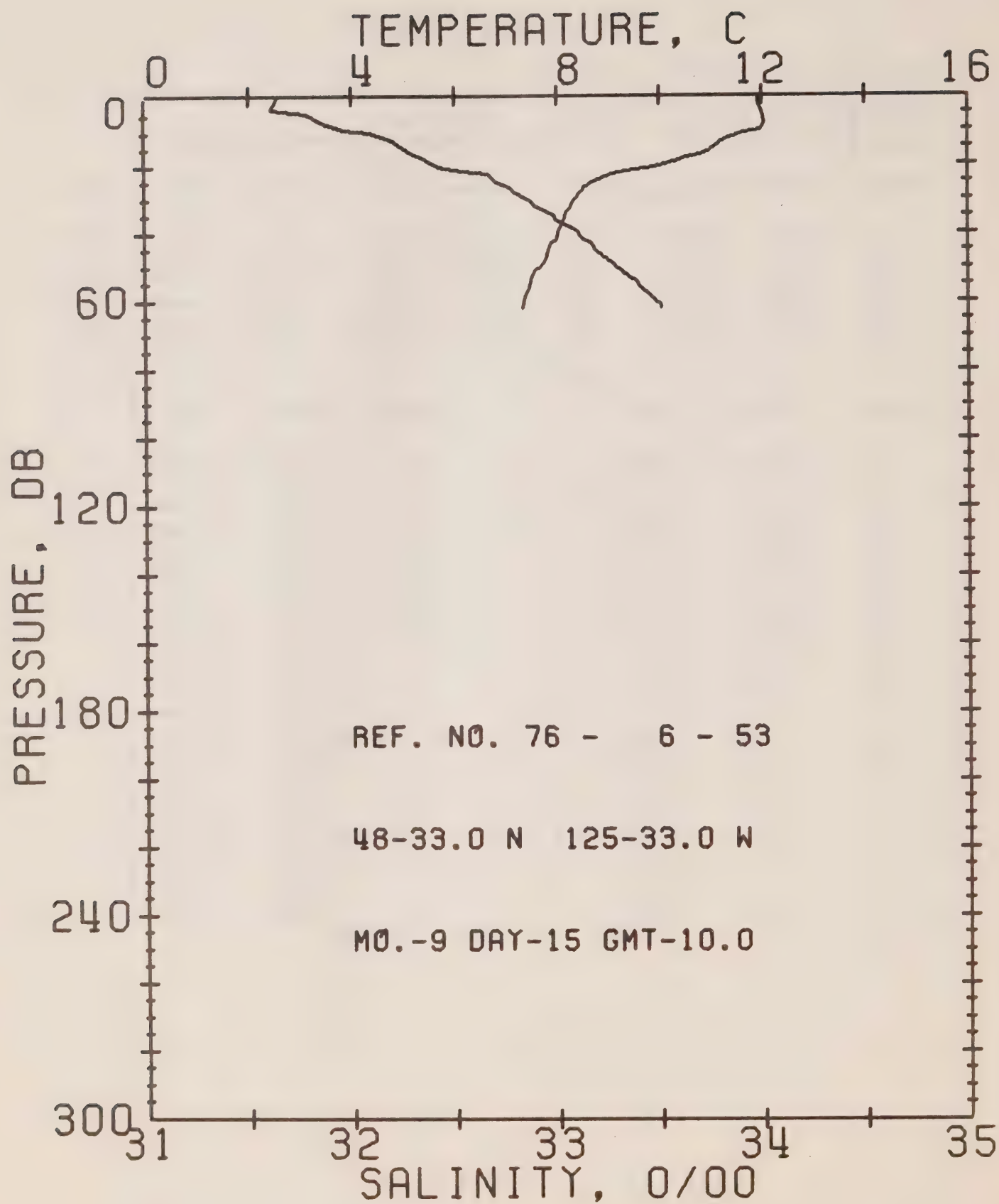
STATION 2

POSITION 48-38.0N, 126- 0.0W GMT 8.5

RESULTS OF STP CAST 43 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.00	32.00	0	23.90	401.9	0.0	0.0	1500.
10	14.00	32.00	10	23.90	402.3	0.40	0.02	1501.
20	13.98	32.12	20	24.00	393.1	0.80	0.08	1501.
30	9.82	32.47	30	25.03	294.4	1.15	0.17	1487.
50	8.24	32.59	50	25.37	262.2	1.70	0.39	1482.
75	7.35	32.94	75	25.77	224.3	2.30	0.77	1479.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	14.00	32.00	52.	7.85	32.61
8.	14.00	32.00	54.	7.79	32.66
9.	14.00	32.00	55.	7.73	32.66
19.	14.00	32.01	58.	7.50	32.67
21.	13.97	32.24	59.	7.47	32.67
23.	13.35	32.32	61.	7.40	32.69
25.	12.21	32.37	63.	7.39	32.71
27.	10.86	32.40	67.	7.38	32.76
28.	10.31	32.43	69.	7.37	32.80
30.	9.82	32.47	72.	7.36	32.89
31.	9.80	32.47	75.	7.35	32.94
34.	9.61	32.53	76.	7.35	32.96
35.	9.59	32.56	78.	7.34	33.09
37.	9.57	32.58	82.	7.33	33.16
39.	9.39	32.60	83.	7.32	33.19
41.	9.18	32.62	84.	7.31	33.29
42.	8.98	32.64	85.	7.30	33.31
45.	8.53	32.67	87.	7.26	33.36
46.	8.44	32.68	89.	7.22	33.39
47.	8.37	32.66	91.	7.20	33.43
50.	8.24	32.59	93.	7.18	33.49
51.	8.11	32.57			



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 6- 53

DATE 15/ 9/76

STATION 1

POSITION 48-33.0N, 125-33.0W GMT 10.0

RESULTS OF STP CAST 37 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.92	31.65	0	24.03	389.1	0.0	0.0	1493.
10	11.99	31.96	10	24.26	367.9	0.38	0.02	1494.
20	10.16	32.39	20	24.91	305.6	0.72	0.07	1488.
30	8.38	32.84	30	25.55	245.1	0.98	0.14	1482.
50	7.67	33.29	50	26.00	202.2	1.43	0.32	1480.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	11.92	31.65	35.	8.17	32.98
3.	11.91	31.62	36.	8.16	32.99
4.	11.97	31.61	39.	8.06	33.08
5.	12.01	31.78	42.	7.99	33.13
8.	12.04	31.86	43.	7.89	33.16
10.	11.99	31.96	45.	7.85	33.19
11.	11.66	32.09	47.	7.82	33.22
13.	11.28	32.19	49.	7.75	33.27
17.	10.91	32.29	50.	7.67	33.29
18.	10.53	32.34	51.	7.59	33.31
19.	10.40	32.36	53.	7.52	33.35
21.	9.92	32.42	54.	7.50	33.38
22.	9.36	32.54	56.	7.47	33.41
23.	9.08	32.66	58.	7.42	33.45
25.	8.68	32.70	59.	7.40	33.46
27.	8.54	32.77	60.	7.37	33.48
28.	8.49	32.79	61.	7.35	33.50
31.	8.33	32.87	62.	7.34	33.51
32.	8.30	32.89			

Surface Salinity and Temperature Observations

(P-76-6)

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 6

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DAY	GMT	0/00	C	WEST
76	8	5	545	30.904		125-33
76	8	5	700	31.166		126- 0
76	8	5	845	31.484		126-40
76	8	5	1310	32.417 b		128-40
76	8	5	1655	32.361 b		129-40
76	8	5	1930	32.318 b		130-40
76	8	5	2200	32.411 b		131-40
76	8	6	30	32.412 b	13.7	132-40
76	8	6	300	32.411 b	13.3	133-40
76	8	6	545	32.478 b	13.4	134-40
76	8	6	800	32.428 b	12.9	135-40
76	8	6	1045	32.469 b		136-40
76	8	6	1330	32.457 b	12.8	137-40
76	8	6	1600	32.522 b	12.5	138-40
76	8	6	1830	32.790 b	11.8	139-40
76	8	6	2100	32.453 b	11.6	140-40
76	8	6	2335	32.592 b	11.5	141-40
76	8	7	330	32.787 b	11.4	142-40
76	8	7	915	32.559	11.2	143-40
76	8	8	0	32.700	11.8	ON STATION
76	8	9	0	32.691	11.8	ON STATION
76	8	10	0	32.669	12.0	ON STATION
76	8	11	0	32.712	11.6	ON STATION
76	8	12	0	32.709	11.5	ON STATION
76	8	13	0	32.729 b	11.5	ON STATION
76	8	14	0	32.720	11.4	ON STATION
76	8	15	0	32.701	11.5	ON STATION
76	8	16	0	32.697	11.5	ON STATION
76	8	17	0	32.671	11.7	ON STATION
76	8	18	0	32.655	11.7	ON STATION
76	8	19	0	32.686	11.8	ON STATION
76	8	20	0	32.671	11.8	ON STATION
76	8	21	0	32.692	11.7	ON STATION
76	8	22	0	32.706	11.7	ON STATION
76	8	23	0	32.645	11.9	ON STATION
76	8	24	0	32.698	12.0	ON STATION
76	8	25	0	32.684	12.1	ON STATION
76	8	26	0	32.685	11.8	ON STATION
76	8	27	0	32.683 b	12.0	ON STATION
76	8	28	0	32.695	11.8	ON STATION
76	8	29	0	32.696	11.9	ON STATION
76	8	30	0	32.676	12.7	ON STATION
76	8	31	0	32.675	13.0	ON STATION
76	9	1	0	32.694	12.6	ON STATION

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 6

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
76	9	2	0	32.692	12.2	ON STATION
76	9	3	0	32.683	12.2	ON STATION
76	9	4	0	32.690	11.9	ON STATION
76	9	5	0	32.692	12.1	ON STATION
76	9	6	0	32.710	12.0	ON STATION
76	9	7	0	32.683 ^b	12.1	ON STATION
76	9	8	0	32.611 ^b	12.2	ON STATION
76	9	9	0	32.652	12.3	ON STATION
76	9	10	0	32.654	12.3	ON STATION
76	9	11	0	32.662	12.4	ON STATION
76	9	12	0	32.624	12.3	ON STATION
76	9	12	2300	32.683	12.2	143-40
76	9	13	945	32.614	11.8	141-40
76	9	13	1515	32.373	12.3	139-40
76	9	13	1745	32.339	12.3	138-40
76	9	13	2020	32.341	12.7	137-40
76	9	13	2255	32.350	12.8	136-40
76	9	14	145	32.271	12.9	135-40
76	9	14	415	32.269	13.2	134-40
76	9	14	645	32.302	13.2	133-40
76	9	14	915	32.297	13.5	132-40
76	9	14	1220	32.352	14.0	131-40
76	9	14	1500	32.280	14.0	130-40
76	9	14	2000	32.330	13.8	129-40
76	9	14	2310	32.251	14.3	128-40
76	9	15	215	32.155	14.8	127-40
76	9	15	600	31.931	14.7	126-40
76	9	15	815	31.735		126- 0
76	9	15	1000	31.367		125-33

^b DENOTES SALINITY SAMPLE TAKEN FROM A
BUCKET. ALL OTHER SAMPLES TAKEN FROM
THE SEAWATER LOOP

CAI EP 321
- 77R03

Government
Publications

OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P
(50° N., 145° W.)

Volume 76

10 September - 27 October 1976

Seakem Oceanography Ltd.



INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Victoria, B.C.

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Institute of Ocean Sciences, Patricia Bay
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Pacific Marine Science Report 77-3

OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P (50°N, 145°W)

Volume 76

10 September - 27 October 1976

Seakem Oceanography Ltd.

Institute of Ocean Sciences, Patricia Bay
Victoria, B.C.

January 1977

This is a manuscript which has received only limited circulation. On citing this report in a bibliography, the title should be followed by the words "UNPUBLISHED MANUSCRIPT" which is in accordance with accepted bibliographic custom.

ABSTRACT

Physical, chemical and biological oceanographic observations are made from the weathership at Ocean Weather Station Papa, and between Esquimalt and Station Papa, on a routine continuing basis. Physical oceanography data only are shown, including profiles obtained with bottle casts, and conductivity-temperature-pressure instruments. Surface observations are also shown.

INTRODUCTION

Canadian operation of Ocean Weather Station P (Latitude 50°00'N, Longitude 145°00'W) was inaugurated in December 1950. The station is occupied primarily to make meteorological observations of the surface and upper air and to provide an air-sea rescue service. The station is manned by two vessels operated by the Marine Services Branch of the Ministry of Transport. They are the CCGS Vancouver and the CCGS Quadra. Each ship remains on station for a period of six weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch.

Bathythermograph observations have been made at Station P since July 1952. A program of more extensive oceanographic observations commenced in August 1956. This was extended in April 1959 by the addition of a series of oceanographic stations along the route to and from Station P and Swiftsure Bank. These stations are known as Line P stations. The number of stations on Line P has been increased twice and now consists of twelve stations (Fig. 1). Bathythermograph observations and surface salinity sample collections, in addition to being made on Line P oceanographic stations, are also made at odd meridians at 40', i.e. 139°40'W, 141°40'W, etc. These stations are known as Line P BT stations. Data observed prior to 1968 has been indexed by Collins et al. (1969).

The present record includes hydrographic, continuously sampled STP and surface salinity and temperature data collected from the CCGS Quadra during the period 10 September to 27 October 1976.

All physical oceanographic data have been stored by the Canadian Oceanographic Data Centre (CODC), 615 Booth Street, Ottawa, Ontario, Canada. Requests for these data should be directed to CODC.

Biological and productivity data are published in the Manuscript Report series of the Fisheries Research Board of Canada (FRB), Pacific Biological Station, Nanaimo, British Columbia, Canada. Requests for these data should be directed to FRB.

Marine geochemical data are for the Ocean Chemistry Group, Ocean and Aquatic Sciences, Environment Canada, 512 - 1230 Government Street, Victoria, British Columbia, Canada.

PROGRAM OF OBSERVATIONS FROM CCGS QUADRA, 10 September - 27 October 1976
(P-76-7) (CODC Ref. No. 15-76-007)

Oceanographic observations were made by Mr. B. Whitehouse of Seakem Oceanography Ltd., Victoria, B. C.

En route to Station P, Stations 1 to 8 were occupied and a STP profile made to near bottom or 1500 metres. Stations 9 to 12 were cancelled due to rough weather.

Samples for salinity, nitrate, nutrient, alkalinity and total CO₂ were taken from the seawater loop at each whole station.

15 minute tarball tows were made at Stations 6 and 8 (the tows at Stations 2 and 4 were cancelled due to winch being inoperational).

The thermosalinograph, surface temperature recorder, and PCO₂ system were run continuously.

Surface salinity samples were collected at whole and half stations 5½ to 12 (except for Station 8½) and surface bucket salinities at whole stations 2 to 5.

Mechanical BT or XBT's were taken at all Line P and BT stations.

At Station P the oceanographic program was carried out as follows:

I. Physical Oceanography

- 1) Profiles of salinity, temperature and oxygen were obtained from 2 hydrographic stations to near bottom (4200 metres).
- 2) 8 STP profiles to 1500 metres and 22 to 300 metres were obtained.
- 3) BT's were taken every three hours to coincide with meteorological observations, encoded and transmitted according to the IGOSS format.
- 4) Salinity samples daily at 0000 hrs GMT from the seawater loop.

II. Marine Geochemistry

- 1) Nutrient samples were collected daily at 0000 hrs GMT and once every hour for a 24 hour period from the seawater loop.
- 2) Salinity samples were collected daily at 0000 hrs GMT.

- 3) Alkalinity and total CO₂ samples every two to three days from the seawater loop.
- 4) Air CO₂ samples weekly in duplicate.
- 5) 4 surface bucket samples for hydrocarbons.
- 6) 6 surface tarball tows.
- 7) 7 seawater C-14 samples were extracted from 45 gallons of seawater taken from the seawater loop. 8 seawater C-13 and 3 air C-13 samples were also taken.
- 8) Hydrocasts for nutrients, alkalinity, total CO₂, and tritium.
- 9) PCO₂ system in operation for the entire 6 weeks on station with carboys filled with seawater about twice a week for PCO₂ analysis.

III. Biological and Productivity

Samples were obtained as follows:

- 1) 24 - 300 metre vertical plankton hauls.
 2 - 1200 metre vertical plankton hauls.
 7 surface plankton tows.
 5 Secchi disc readings.
- 2) 2 profiles for plant pigment and nitrate were obtained and 4 samples each were taken from the seawater loop.

En route from Station P, STD casts and tarball tows were cancelled. Nutrient, nitrate, alkalinity, total CO₂ and salinity samples were taken at all whole stations. Salinity samples were also drawn from the loop for all whole and half stations 12 to 5 and surface bucket samples were collected at Stations 5 to 1. The PCO₂ system, surface temperature recorder, and thermosalinograph ran continuously. Mechanical BT's or XBT's were taken at all whole and half stations.

Observations for Other Agencies

- 1) Marine mammal observations were made by the ship's officers for Mr. I. McAskie, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, British Columbia, Canada.
- 2) Bird observations were made by the ship's officers for Dr. M. Myres, University of Alberta, Calgary, Alberta, Canada and Mr. J. Guiguet, Curator of Birds and Mammals, Provincial Museum, Department of Recreation and Conservation, Victoria, British Columbia, Canada.

- 3) Air CO₂ samples weekly in duplicate for Scripps Institution of Oceanography, La Jolla, San Diego, California, U. S. A.

OBSERVATIONAL PROCEDURES

Observations for salinity, oxygen and temperature from all hydrographic casts, including the surface, were obtained with Niskin water sample bottles equipped with either Richter and Wiese and/or Yoshino Keiki Co. reversing thermometers. Two protected thermometers were used on all bottles, and one unprotected thermometer was used on each bottle at depths of 300 m or greater. The accuracy of protected reversing thermometers is believed to be $\pm 0.02^{\circ}\text{C}$.

The daily surface water temperatures were measured from a bucket sample using a deck thermometer of $\pm 0.1^{\circ}\text{C}$ accuracy. The daily surface salinity samples were obtained from the seawater loop. When the seawater loop was not operational, these samples were obtained with a bucket, and are indicated with a "b" in this data record.

Salinity determinations were made aboard ship with either an Autolab Model 601 Mark III inductive salinometer or a Hytech Model 6220 lab salinometer. Accuracy using duplicate determinations is estimated to be ± 0.003 ‰.

Depth determinations were made using the "depth difference" method described in the U. S. N. Hydrographic Office Publication No. 607 (1955). Depth estimates have an approximate accuracy of ± 5 m for depths less than 1000 m, and $\pm 5\%$ of depth for depths greater than 1000 m.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Carpenter, 1965).

Line P engine intake continuous temperatures were recorded by a Honeywell Elektronik 15 Recorder. The temperature probe is at a depth of approximately 3 metres below the sea surface and the instrument accuracy is believed to be $\pm 0.1^{\circ}\text{C}$.

Each ship is equipped with a Plessey Model 6600-T thermosalinograph which is used, on Line P, for continuous recording of surface temperatures and salinities from the ship's seawater loop. The temperature probe is mounted at the seawater loop intake (approximately 3 metres below the surface) and the salinity probe and recorder are situated in the dry lab. The accuracy of this instrument is believed to be ± 0.1 ‰ for salinity.

STP profiles were taken with a Plessey Model 9006 STP system.

Data was processed for publication by Ms. M. Sainsbury of Seakem Oceanography Ltd., Victoria, B.C.

COMPUTATIONS

All hydrographic data were processed with the aid of an IBM 370 computer. Reversing thermometer temperature corrections, thermometric depth calculations, and accepted depth from the "depth difference" method were computed. Extraneous thermometric depths caused by thermometer malfunctions are automatically edited and replaced. A Calcomp 565 Offline Plotter was used to plot temperature - salinity and temperature - oxygen vs \log_{10} depth. These plots were used to check the data for errors.

Missing hydrographic data were obtained using a weighted parabolas interpolation method (Reiniger and Ross, 1968). These data are indicated with an asterisk in this data record.

Data values which we suspect but which we have included in this data record are indicated with a plus. These data have been removed from punch card and magnetic tape records.

Analog records from the salinity - temperature - pressure instrument have been machine digitized, then replotted using the Calcomp Plotter.

Digitization was continued until original and computer plotted traces were coincident. Temperature and salinity values were listed at standard pressures; integrals (depths, geopotential anomaly, and potential energy anomaly) were computed from the entire array of digitized data.

The headings for the data listings are explained as follows:

PRESS	is pressure (decibars)
TEMP	is temperature (degrees Celsius)
SAL	is salinity (parts per thousand)
DEPTH	is reported in metres
SIGMA-T	is specific gravity anomaly
SVA	is specific volume anomaly
THETA	is potential temperature (degrees Celsius)
SVA (THETA)	is potential specific volume anomaly
DELTA D	is geopotential anomaly (J/kg)
POT EN	is potential energy in units of 10^8 ergs/cm ²
OXY	is the concentration of dissolved oxygen expressed in millilitres per litre
B-V PERIOD	is the Brunt-Vaisala period in minutes

REFERENCES

- Carpenter, J. H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. and Oceanogr.*, 10: 141-143.
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- U. S. N. Hydrographic Office, 1955. Instruction manual for oceanographic observations, Publ. No. 607.

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- Figure 5. Salinity difference between hydro data and STP. P-76-7.
- Figure 6. Temperature difference between hydro data and STP. P-76-7.

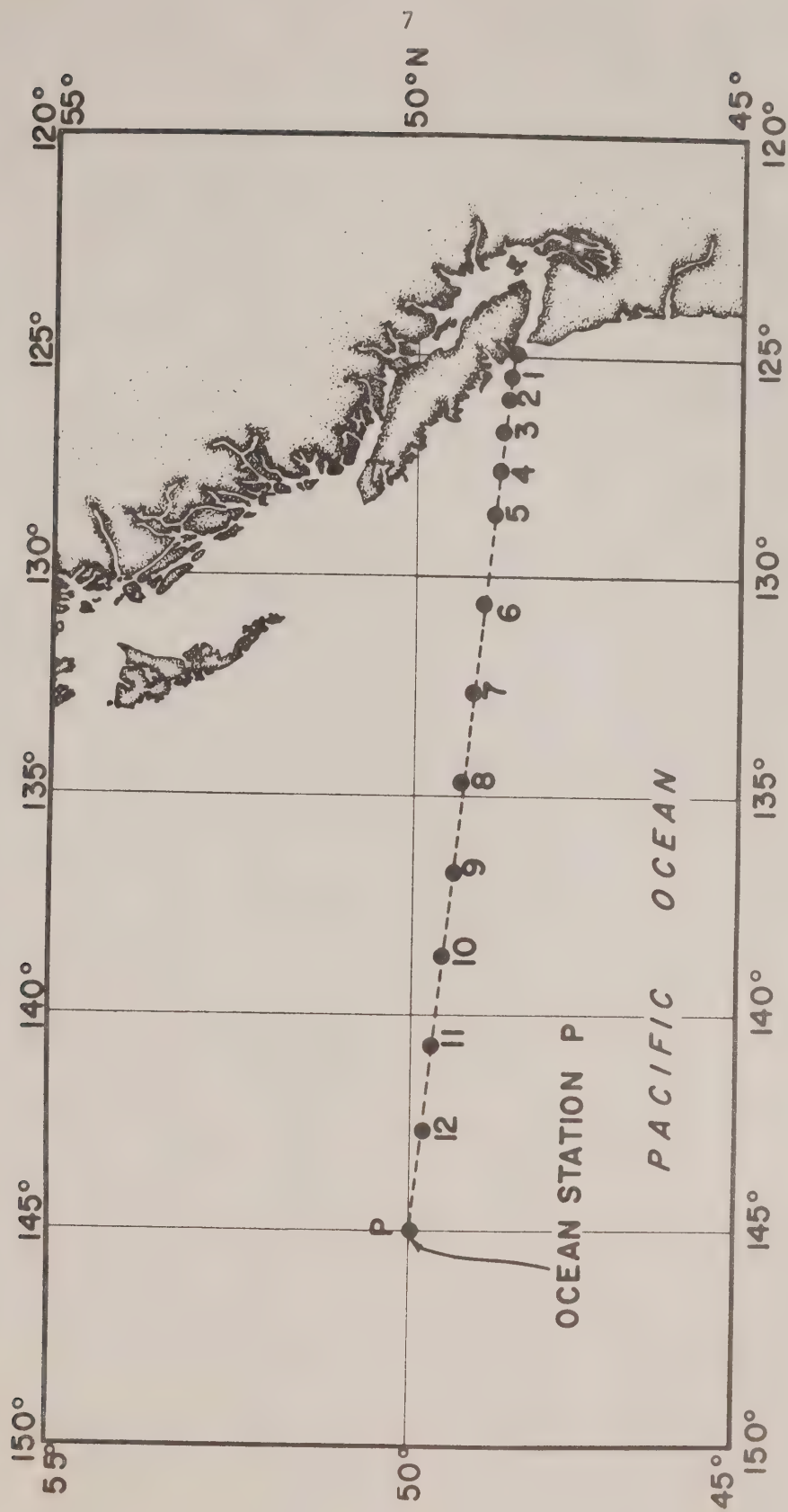


Fig. 1 Chart showing Line P station positions.

Oceanographic Data Obtained on Cruise P-76-7

(CODC Reference No. 15-76-007)

Results of Hydrographic Observations

(P-76-7)

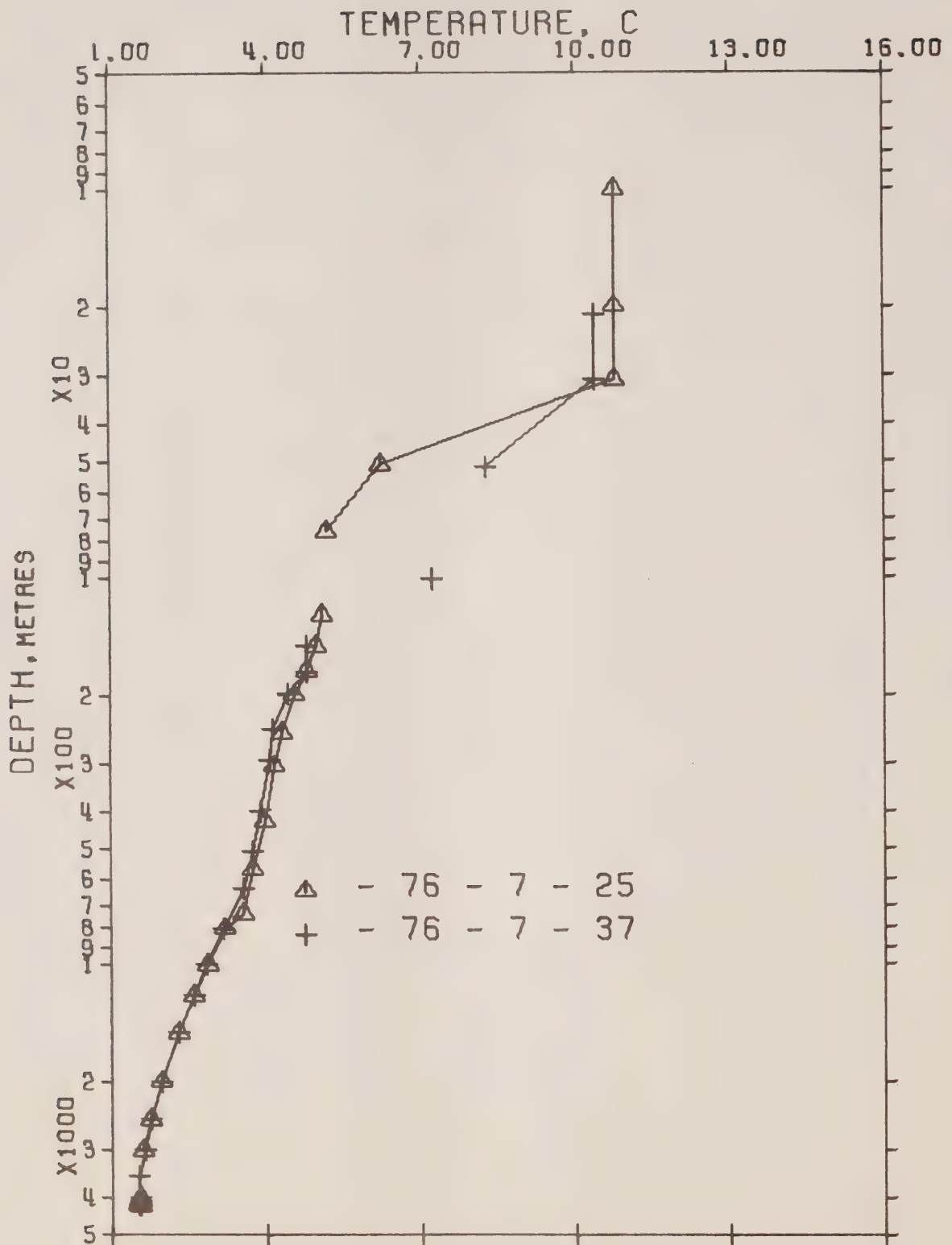


Figure 2. Composite plot of temperature vs \log_{10} depth for Station P. P-76-7.

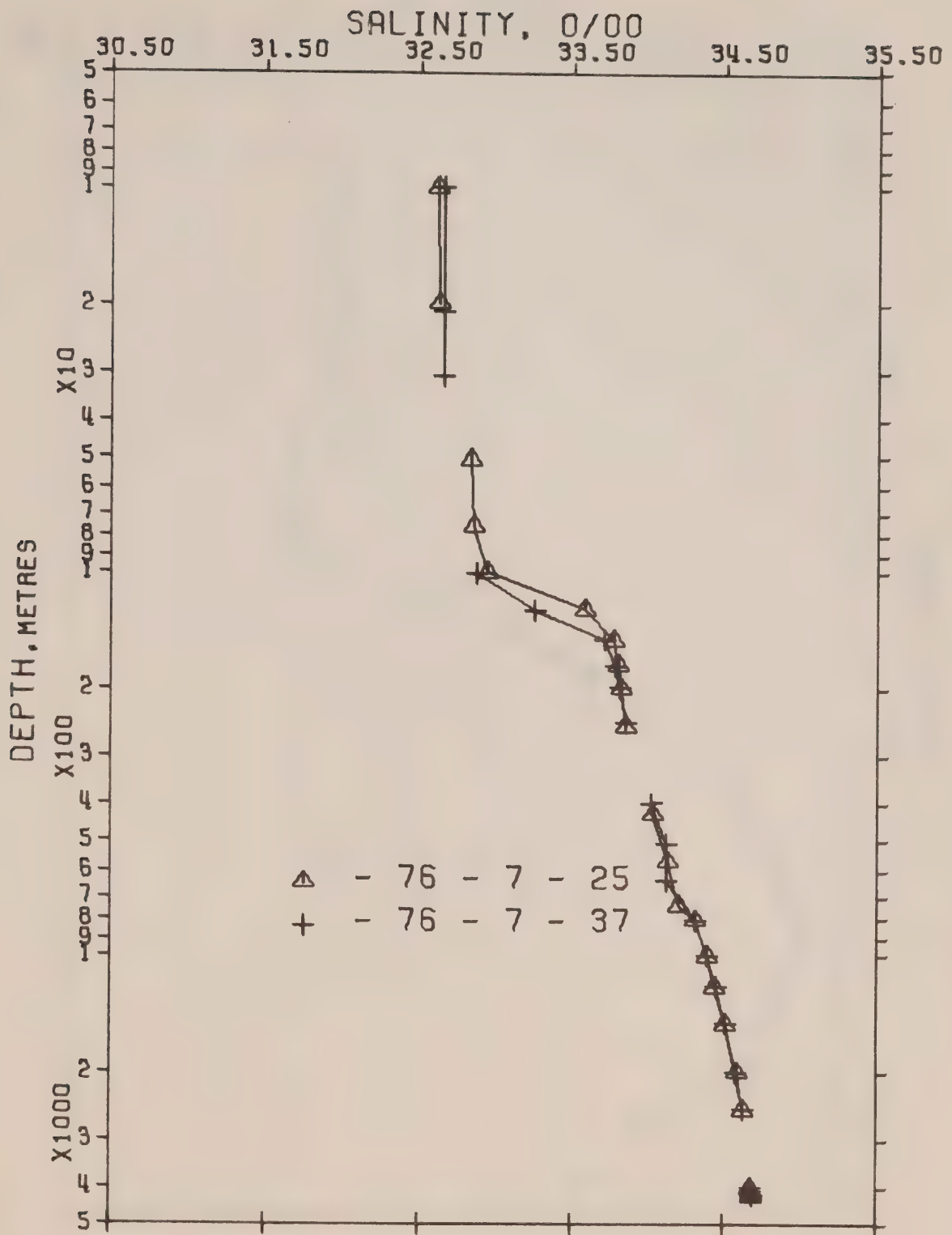


Figure 3. Composite plot of salinity vs \log_{10} depth for Station P. P-76-7.

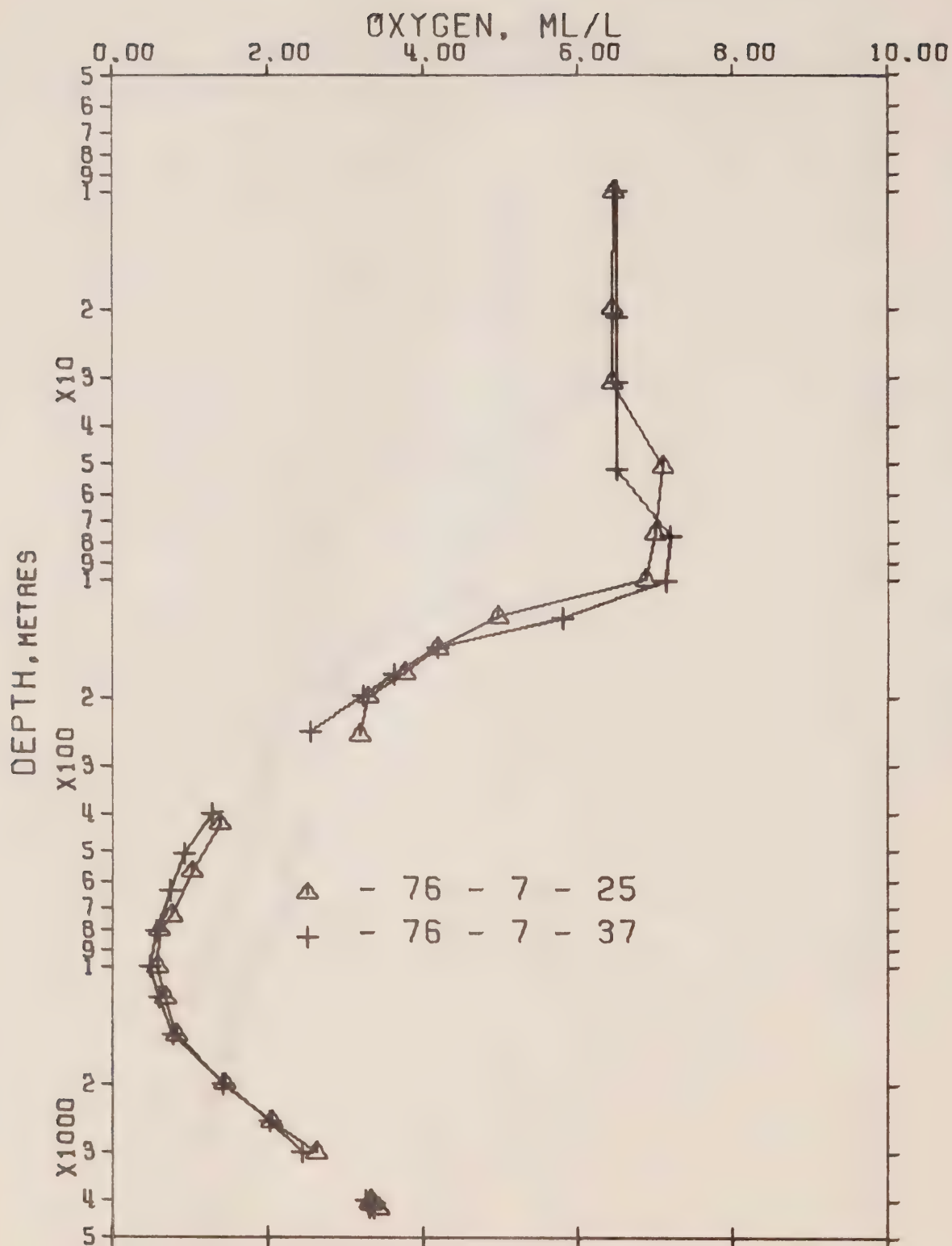
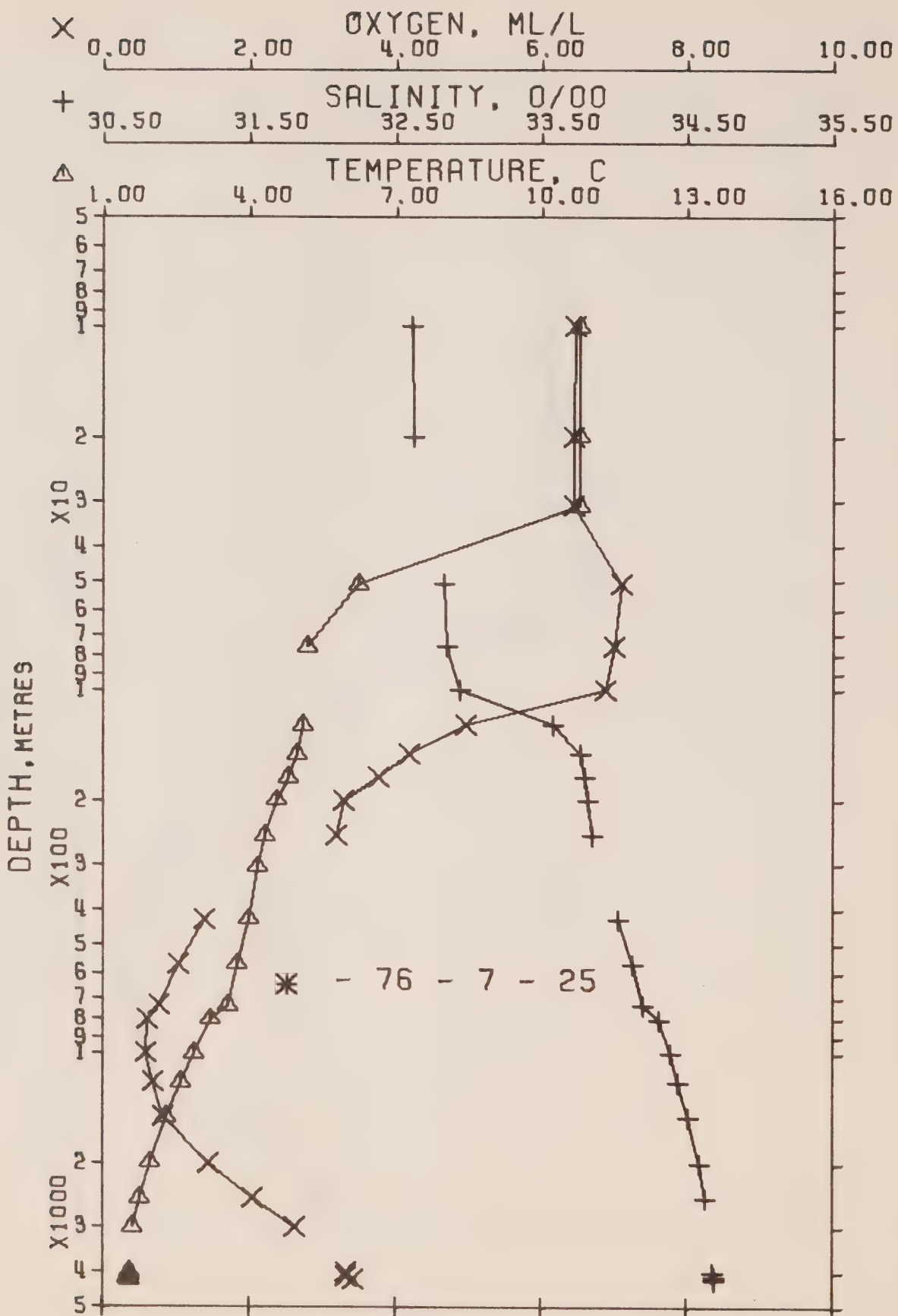


Figure 4. Composite plot of oxygen vs \log_{10} depth for Station P. P-76-7.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 25

DATE 30/ 9/76

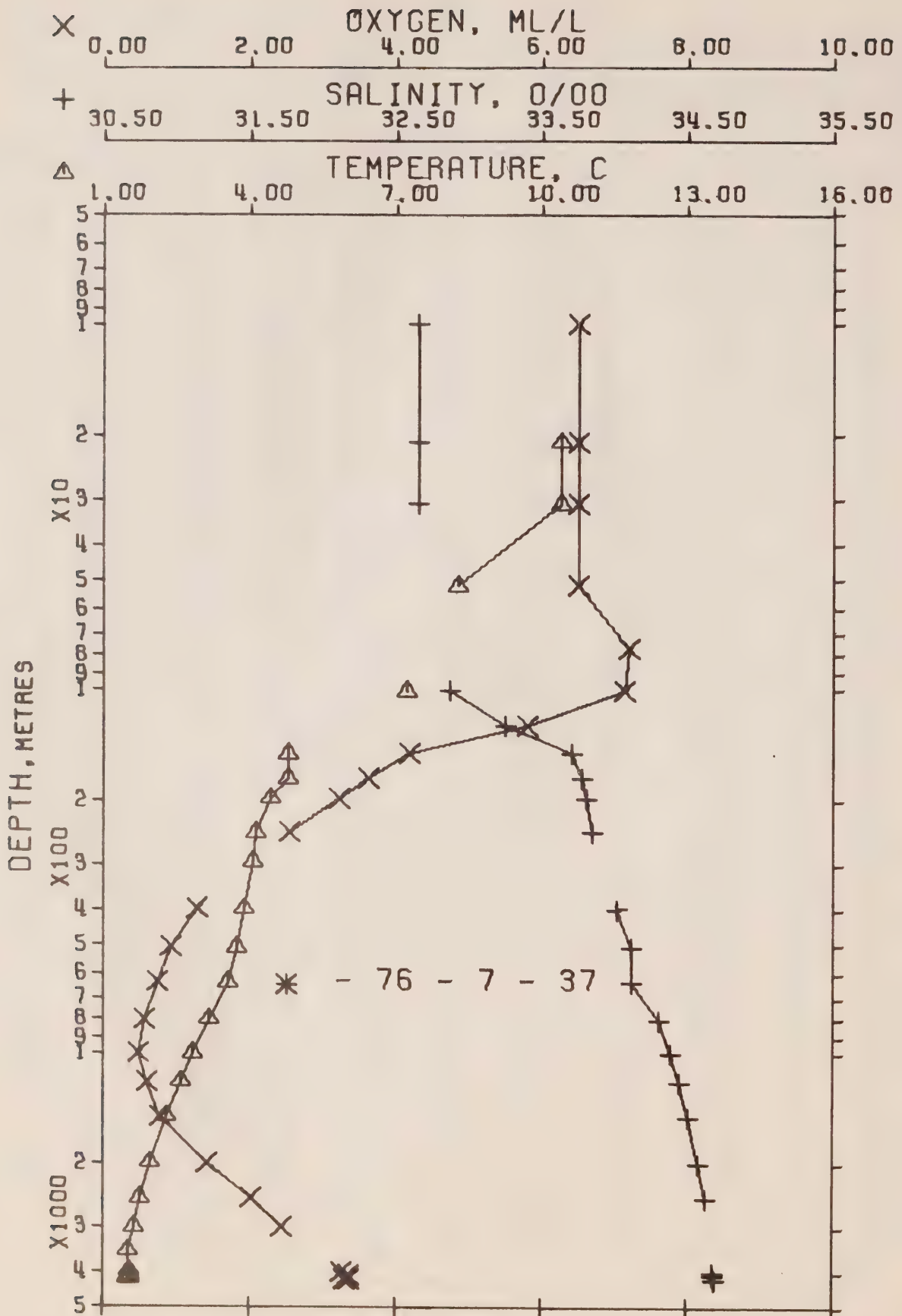
GMT 18.3

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.83	32.614	0	24.973	299.5	10.83	299.2	0.0	0.0	6.44	1490.
10	10.79	32.615	10	24.981	298.9	10.79	298.5	0.30	0.02	6.46	1490.
20	10.79	32.620	20	24.985	298.8	10.79	298.2	0.60	0.06	6.44	1491.
30*	10.79	32.707	30	25.053	292.5	10.79	291.6	0.89	0.14	6.43	1491.
31	10.79	32.716 *	31	25.059	291.9	10.79	291.0	0.93	0.15	6.43	1491.
50*	6.47	32.820	50	25.798	221.6	6.46	220.7	1.42	0.35	7.07	1475.
51	6.23	32.826	51	25.833	218.3	6.23	217.4	1.45	0.36	7.10	1474.
75*	5.23	32.848	75	25.970	205.4	5.23	204.4	1.94	0.68	7.01	1470.
76	5.18	32.849	76	25.977	204.8	5.17	203.7	1.97	0.70	7.00	1470.
100*	5.13	32.939	99	26.053	197.8	5.12	196.5	2.44	1.13	6.87	1470.
101	5.13*	32.941	100	26.055	197.6	5.12	196.3	2.45	1.14	6.87	1470.
125*	5.09	33.565	124	26.553	150.7	5.08	149.0	2.89	1.64	5.01	1472.
126	5.09	33.584	125	26.568	149.2	5.08	147.6	2.90	1.65	4.96	1472.
150*	4.97	33.765	149	26.725	134.6	4.96	132.7	3.24	2.13	4.21	1472.
151	4.97	33.772	150	26.731	134.0	4.96	132.1	3.25	2.15	4.18	1472.
175	4.79	33.800	174	26.773	130.2	4.78	128.1	3.57	2.67	3.76	1471.
200*	4.56	33.821	199	26.815	126.4	4.55	124.2	3.88	3.28	3.30	1471.
201	4.55	33.822	200	26.817	126.2	4.53	123.9	3.90	3.32	3.27	1471.
225*	4.43	33.836	225	26.840	124.2	4.42	121.7	4.20	3.96	3.23	1471.
250*	4.32	33.849	248	26.862	122.2	4.30	119.6	4.50	4.71	3.19	1471.
253	4.31	33.850	251	26.865	122.1	4.29	119.4	4.54	4.79	3.18	1471.
300*	4.17	33.908	298	26.926	116.6	4.15	113.6	5.10	6.38		1471.
308	4.15	33.918*	306	26.935	115.8	4.13	112.6	5.20	6.68		1471.
400*	4.00	34.007	400	27.021	108.4	3.97	104.5	6.22	10.38		1472.
429	3.96	34.031	426	27.045	106.3	3.93	102.2	6.54	11.72	1.39	1472.
500*	3.83	34.081	501	27.097	101.8	3.80	97.1	7.27	15.19	1.19	1473.
573	3.72	34.126	568	27.144	97.9	3.68	92.6	8.00	19.16	1.01	1474.
600*	3.69	34.140	598	27.158	96.7	3.65	91.3	8.26	20.74	0.97	1474.
700*	3.58	34.185	698	27.205	92.9	3.53	86.8	9.21	27.02	0.82	1475.
746	3.54	34.204	735	27.224	91.4	3.49	85.0	9.63	30.13	0.76	1476.
800*	3.24	34.291	793	27.322	82.1	3.18	75.7	10.11	33.86	0.53	1476.
811	3.18	34.308	804	27.341	80.2	3.12	73.9	10.20	34.62	0.60	1476.
900*	3.03	34.345	897	27.384	76.5	2.97	69.8	10.88	40.58	0.59	1477.
1000*	2.88	34.382	991	27.428	72.6	2.81	65.6	11.63	47.80	0.57	1478.
1012	2.86	34.386	1002	27.433	72.2	2.79	65.1	11.71	48.67	0.57	1478.
1200*	2.61	34.440	1189	27.498	66.6	2.53	58.8	13.02	63.38	0.67	1480.
1213	2.59	34.444	1201	27.502	66.2	2.51	58.5	13.11	64.47	0.68	1480.
1500*	2.31	34.510	1485	27.579	59.6	2.21	51.1	14.90	89.29	0.82	1484.
1519	2.29	34.514	1502	27.584	59.2	2.19	50.6	15.01	91.00	0.83	1484.
2000*	1.97	34.587	1979	27.668	52.2	1.83	42.4	17.66	138.63	1.41	1491.
2031	1.95	34.591	2006	27.673	51.8	1.81	41.9	17.82	141.92	1.44	1491.
2500*	1.77	34.629	2471	27.717	48.4	1.59	37.5	20.16	195.81	1.98	1498.
2545	1.75	34.632	2511	27.721	48.1	1.57	37.2	20.37	201.42	2.03	1499.
3000*	1.63	34.650	2961	27.745	46.6	1.40	34.6	22.52	262.03	2.56	1506.
3061	1.61	34.653*	3016	27.748	46.4	1.38	34.4	22.80	270.75	2.63	1507.
3500*	1.58	34.668	3450	27.762	46.1	1.31	32.6	24.83	338.54		1514.
3572	1.57*	34.670*	3516	27.765	46.0	1.29	32.4	25.16	350.55		1516.
4000*	1.54	34.683	3937	27.777	45.8	1.22	30.9	27.12	426.25		1523.
4078	1.54	34.685	4009	27.779	45.8	1.21	30.7	27.48	440.94	3.32	1524.
4100*	1.54	34.685	4031	27.779	45.9	1.20	30.6	27.58	445.18	3.32	1525.
4178	1.54	34.687	4107	27.780	46.0	1.20	30.5	27.94	460.41	3.31	1526.
4200*	1.54	34.687	4128	27.781	46.0	1.19	30.4	28.04	464.64		1526.
4268	1.52	34.688	4194	27.783	45.8	1.17	30.2	28.35	478.00		1527.
4278	1.53	34.687	4204	27.781	46.1	1.17	30.4	28.40	480.05	3.42	1528.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 37

DATE 13/10/76

GMT 18.0

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	10.39	32.648	0	25.076	289.7	10.39	289.5	0.0	0.0	6.51	1489.
10	10.40*	32.651	10	25.077	289.9	10.40	289.4	0.29	0.01	6.50	1489.
20*	10.40	32.649	20	25.075	290.2	10.40	289.5	0.58	0.06	6.51	1489.
21	10.40	32.649	21	25.075	290.3	10.40	289.5	0.61	0.07	6.51	1489.
30*	10.39	32.649	30	25.076	290.2	10.39	289.4	0.87	0.13	6.49	1489.
31	10.39	32.649	31	25.076	290.3	10.39	289.4	0.90	0.14	6.49	1489.
50*	8.44	32.737	50	25.458	254.1	8.43	253.1	1.42	0.36	6.50	1482.
52	8.25	32.746*	52	25.493	250.8	8.24	249.7	1.48	0.39	6.50	1482.
75*	7.69	32.813	75	25.627	238.4	7.68	236.9	2.03	0.74	7.14	1480.
77	7.64*	32.820*	77	25.639	237.3	7.63	235.8	2.09	0.79	7.20	1480.
100*	7.25	32.868	100	25.732	228.7	7.24	226.9	2.61	1.26	7.14	1479.
102	7.22	32.871	101	25.738	228.1	7.21	226.4	2.65	1.30	7.14	1479.
125*	5.95	33.229	124	26.186	185.7	5.94	183.9	3.14	1.87	5.99	1475.
127	5.86*	33.254	126	26.216	182.8	5.85	181.0	3.18	1.91	5.80	1474.
150*	4.83	33.692	149	26.683	138.5	4.82	136.7	3.55	2.44	4.25	1471.
151	4.79	33.709	150	26.701	136.8	4.73	134.9	3.56	2.46	4.18	1471.
175*	4.79	33.776	174	26.754	132.0	4.78	129.9	3.87	2.98	3.65	1471.
176	4.79	33.779	175	26.755	131.8	4.78	129.7	3.89	3.01	3.62	1471.
200	4.43	33.807	199	26.818	126.1	4.42	123.8	4.20	3.61	3.22	1470.
225*	4.27	33.831	225	26.854	122.8	4.25	120.8	4.51	4.27	2.86	1470.
249	4.13	33.851	247	26.884	120.0	4.11	117.5	4.80	4.76	2.54	1470.
250*	4.13	33.853	248	26.886	120.0	4.11	117.4	4.81	5.00	2.53	1470.
299	4.05	33.918*	297	26.946	114.6	4.03	111.7	5.39	6.62		1470.
300*	4.05	33.919	298	26.947	114.6	4.03	111.6	5.40	6.65		1470.
400*	3.88	34.023	397	27.046	105.8	3.85	102.0	6.49	10.54	1.25	1472.
402	3.88	34.025	399	27.048	105.7	3.85	101.8	6.51	10.63	1.28	1472.
500*	3.75	34.107	497	27.126	99.0	3.71	94.4	7.52	15.25	0.96	1473.
515	3.73	34.118	511	27.137	98.0	3.69	93.3	7.67	16.03	0.92	1473.
600*	3.61	34.119	598	27.149	97.4	3.57	92.2	8.49	20.72	0.80	1474.
642	3.56	34.119	636	27.155	97.2	3.51	91.6	8.90	23.28	0.75	1474.
700*	3.41	34.190	698	27.225	90.7	3.35	84.9	9.45	27.05	0.68	1475.
800*	3.18	34.298	794	27.334	80.8	3.13	74.6	10.30	33.59	0.53	1475.
814	3.15	34.313	807	27.348	79.5	3.09	73.3	10.42	34.54	0.56	1475.
900*	3.01	34.350	897	27.390	75.9	2.95	69.2	11.08	40.32	0.52	1475.
1000*	2.86	34.388	991	27.435	72.0	2.79	65.0	11.82	47.48	0.43	1473.
1011	2.84	34.392	1001	27.439	71.5	2.77	64.5	11.90	48.27	0.47	1473.
1200*	2.61	34.443	1189	27.500	66.3	2.53	58.6	13.19	62.89	0.60	1480.
1210	2.60	34.446	1198	27.503	66.1	2.52	58.4	13.26	63.73	0.51	1480.
1500*	2.31	34.508	1485	27.577	59.8	2.21	51.2	15.03	88.88	0.77	1484.
1513	2.30	34.510	1496	27.580	59.5	2.20	51.0	15.16	90.03	0.78	1484.
2000*	1.97	34.581	1979	27.663	52.6	1.84	42.9	17.87	138.65	1.40	1491.
2025	1.96	34.584	2000	27.666	52.3	1.82	42.6	18.00	141.31	1.45	1491.
2500*	1.77	34.627	2471	27.715	48.5	1.59	37.7	20.38	196.25	1.97	1498.
2542	1.75	34.630	2508	27.719	48.2	1.57	37.3	20.59	201.48	2.02	1499.
3000*	1.63	34.649	2961	27.743	46.8	1.41	34.8	22.75	262.67	2.39	1505.
3059	1.62	34.651*	3014	27.746	46.6	1.39	34.5	23.03	271.14	2.43	1507.
3500*	1.53	34.667	3450	27.765	45.5	1.26	32.5	25.06	339.00	2.32	1514.
3569	1.52	34.669*	3513	27.767	45.3	1.24	32.2	25.37	350.32		1515.
4000*	1.54	34.682	3937	27.777	45.9	1.21	31.0	27.33	425.36		1523.
4070	1.54	34.684	4001	27.778	45.9	1.21	30.7	27.65	438.99	3.25	1524.
4100*	1.54	34.684	4031	27.778	46.0	1.20	30.7	27.79	444.81	3.28	1525.
4167	1.53	34.685	4096	27.780	46.0	1.19	30.6	28.10	457.82	3.35	1526.
4200*	1.53	34.686	4128	27.781	45.9	1.18	30.5	28.25	464.25	3.36	1525.
4254	1.52	34.688	4181	27.783	45.8	1.17	30.2	28.50	474.90	3.37	1527.
4265	1.53	34.687	4191	27.781	46.1	1.18	30.4	28.54	477.00	3.31	1527.

Results of STP Observations

(P-76-7)

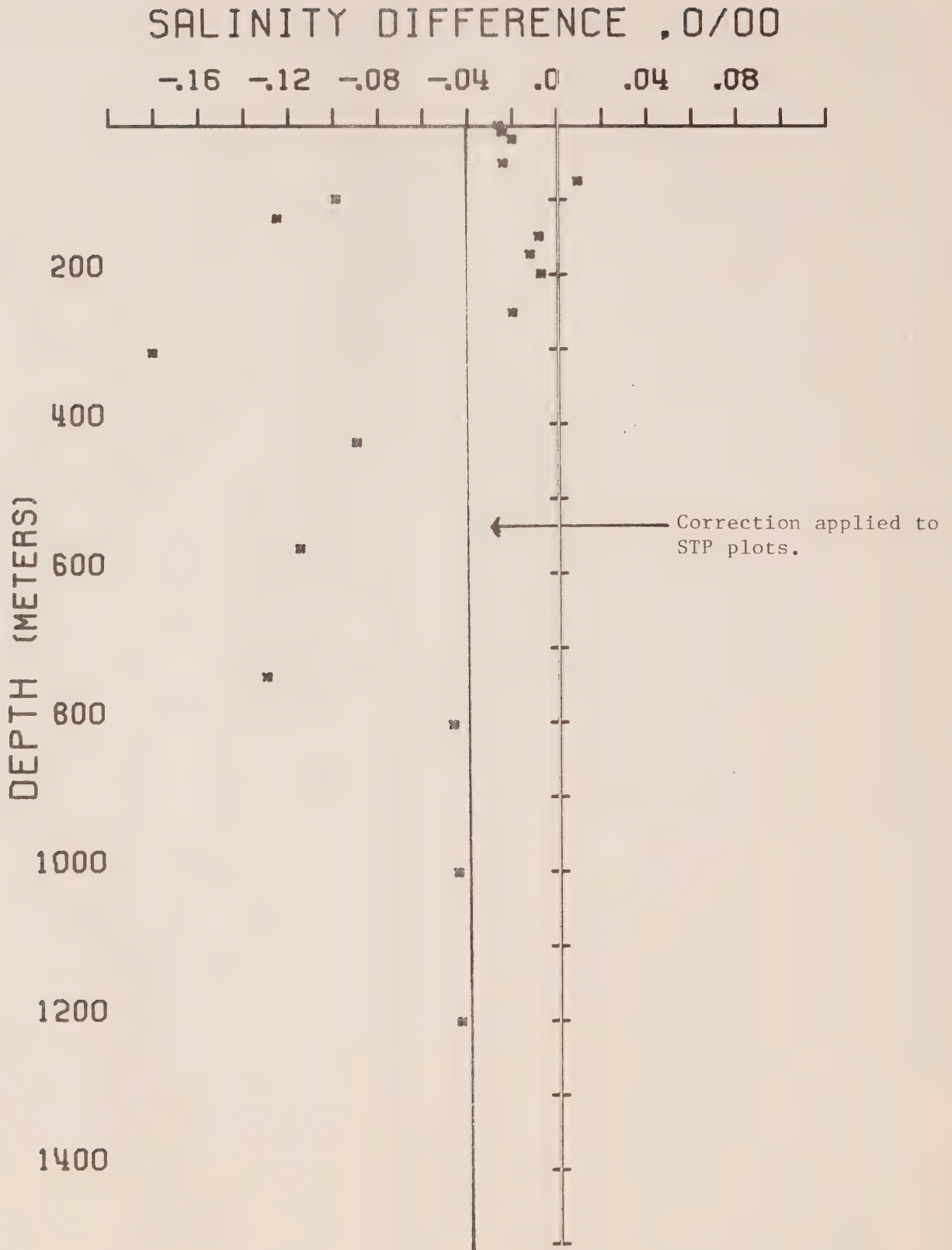


Figure 5. Salinity difference between hydro data and STP. P-76-7.

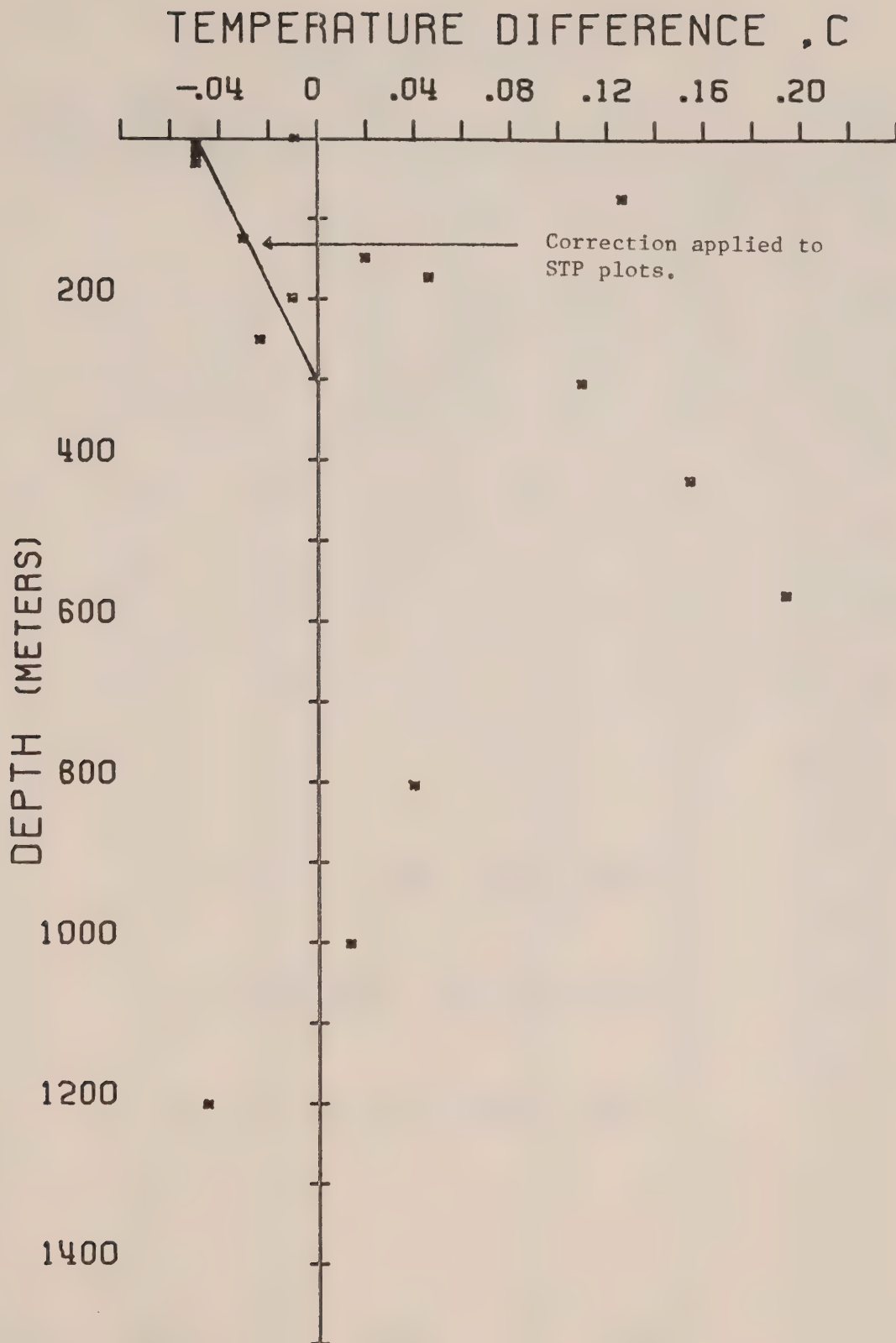
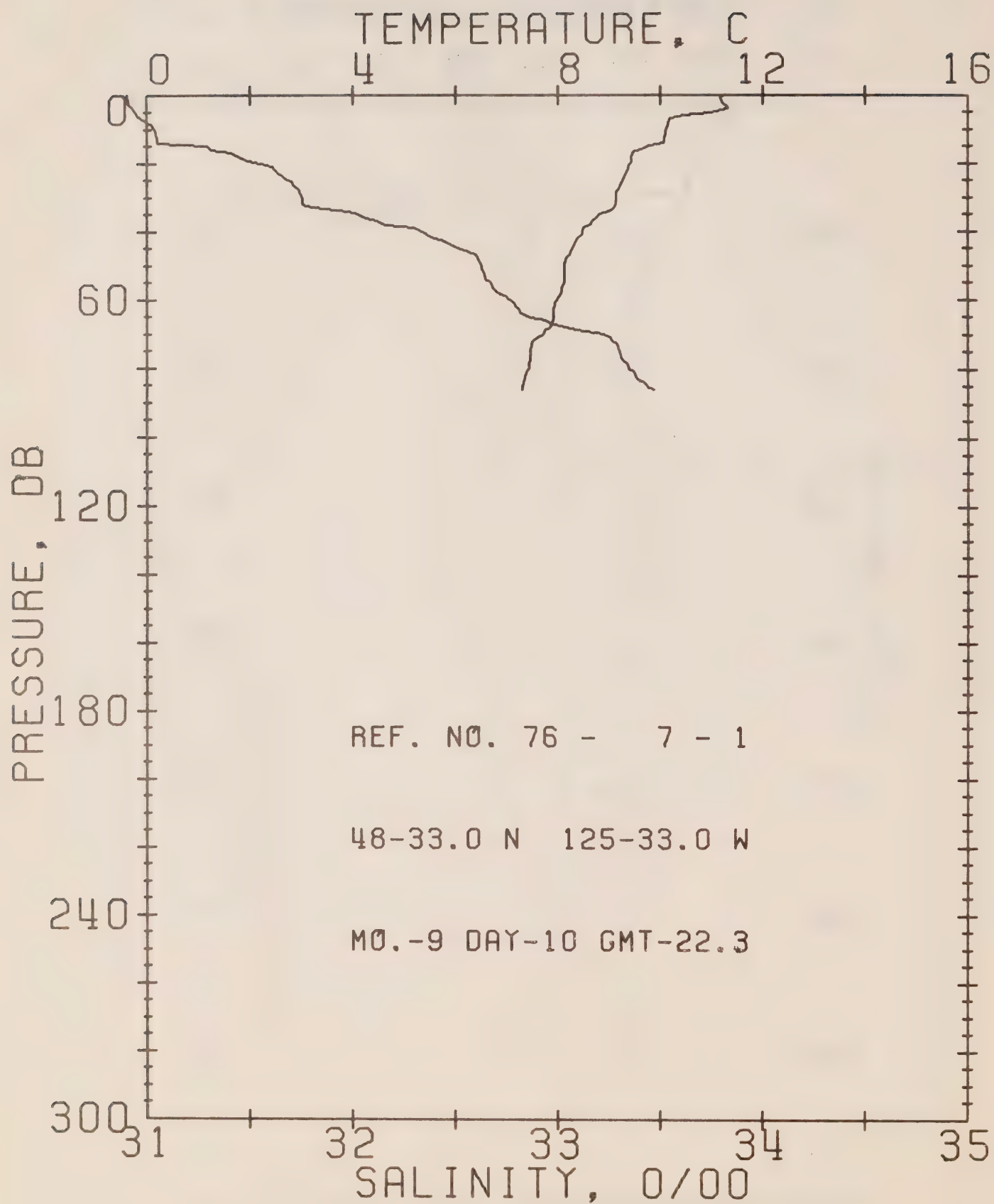


Figure 6. Temperature difference between hydro data and STP. P-76-7.



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REFERENCE NO. 76- 7- 1

DATE 10/ 9/76

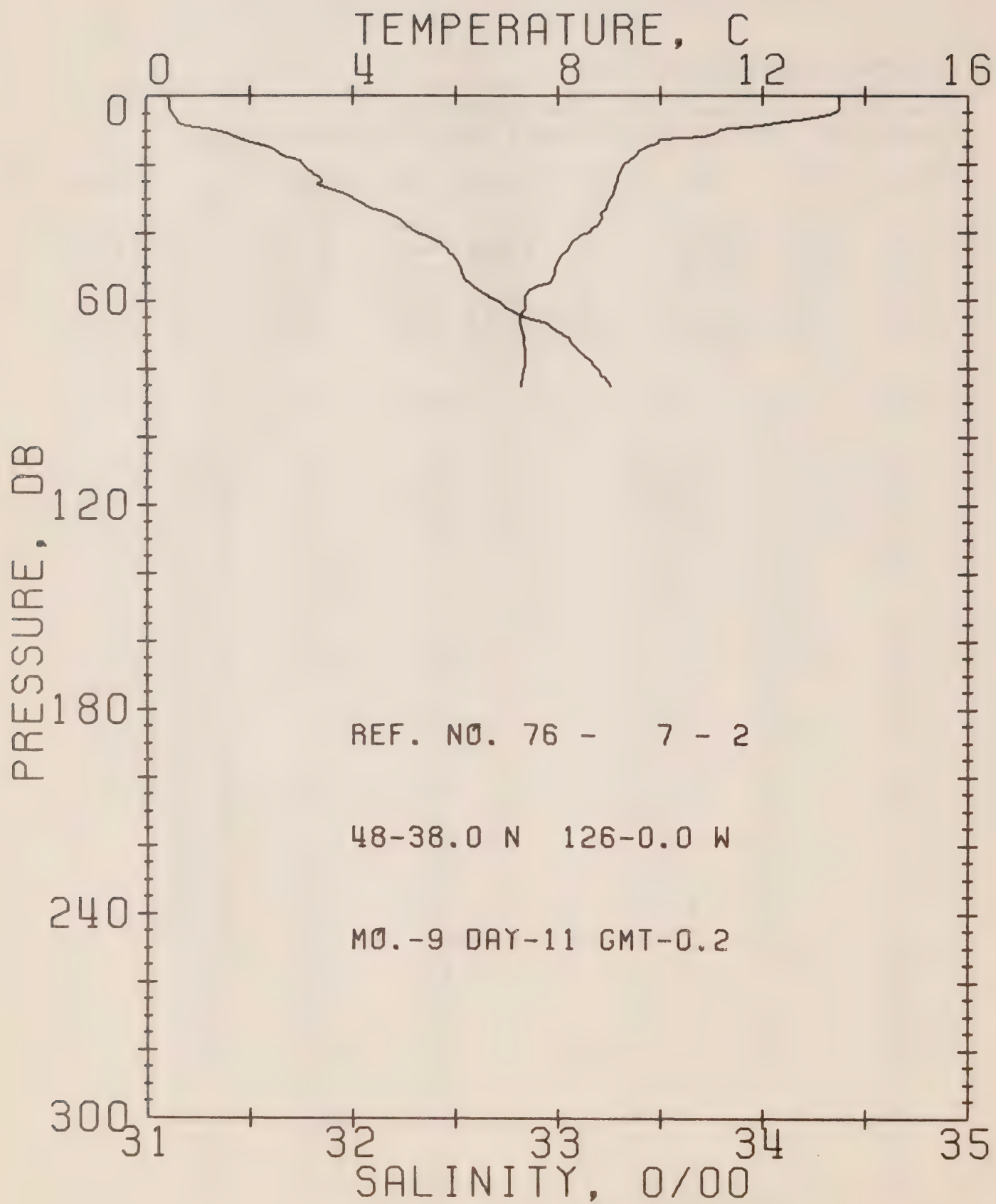
STATION 1

POSITION 48-33.0N, 125-33.0W GMT 22.3

RESULTS OF STP CAST 67 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.15	30.90	0	23.59	431.3	0.0	0.0	1489.
10	10.04	31.03	10	23.88	404.2	0.42	0.02	1486.
20	9.34	31.55	20	24.39	355.1	0.80	0.08	1484.
30	9.07	31.75	30	24.59	336.4	1.15	0.17	1483.
50	8.05	32.63	50	25.43	256.6	1.73	0.40	1481.
75	7.39	33.30	75	26.05	198.1	2.31	0.77	1480.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	11.15	30.90	41.	8.39	32.36
1.	11.09	30.90	42.	8.33	32.40
2.	11.12	30.91	43.	8.28	32.45
3.	11.16	30.91	45.	8.22	32.53
4.	11.23	30.93	47.	8.17	32.60
5.	10.90	30.94	48.	8.08	32.61
6.	10.38	30.95	50.	8.05	32.63
7.	10.11	30.97	51.	8.05	32.63
8.	10.08	31.00	54.	8.05	32.65
9.	10.06	31.02	55.	8.04	32.67
11.	10.02	31.04	57.	8.01	32.69
14.	10.00	31.05	58.	8.00	32.71
15.	9.71	31.29	59.	7.96	32.74
16.	9.54	31.31	61.	7.88	32.78
17.	9.38	31.41	64.	7.85	32.82
19.	9.36	31.47	65.	7.84	32.87
20.	9.34	31.55	66.	7.83	32.94
21.	9.30	31.61	67.	7.82	32.96
22.	9.29	31.62	68.	7.75	33.04
24.	9.21	31.66	69.	7.68	33.09
25.	9.18	31.70	70.	7.64	33.23
26.	9.15	31.71	71.	7.51	33.25
28.	9.07	31.74	72.	7.43	33.27
29.	9.06	31.74	73.	7.41	33.29
30.	9.07	31.75	75.	7.39	33.30
31.	9.06	31.75	77.	7.38	33.31
32.	9.06	31.75	79.	7.36	33.34
33.	9.05	31.81	80.	7.35	33.35
34.	8.92	31.98	81.	7.32	33.37
35.	8.75	32.03	83.	7.29	33.39
36.	8.68	32.06	84.	7.26	33.42
37.	8.60	32.12	85.	7.24	33.44
38.	8.55	32.16	86.	7.22	33.47
39.	8.44	32.30			



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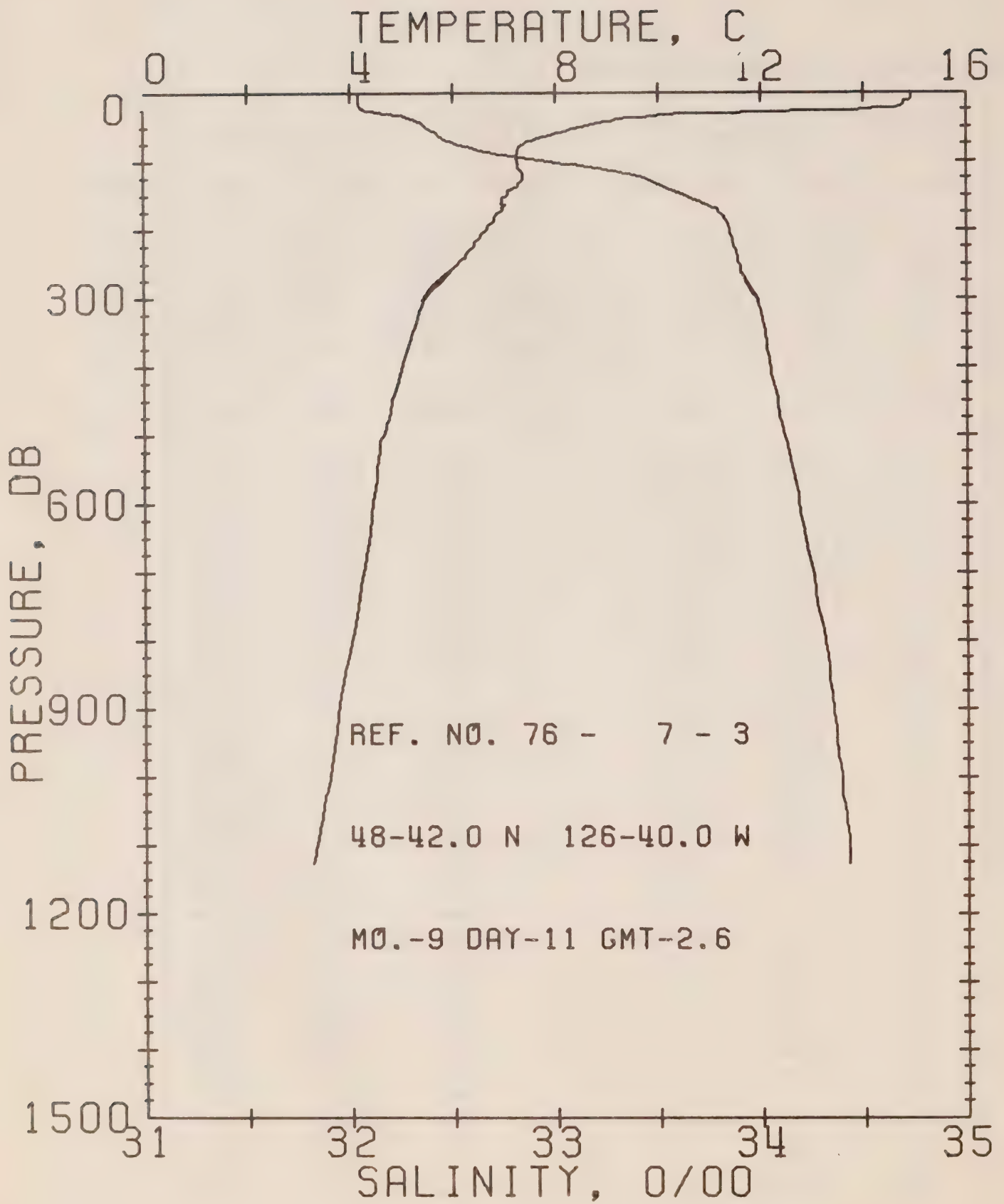
STATION 2

POSITION 48-38.0N, 126- 0.0W GMT 0.2

RESULTS OF STP CAST 66 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.41	31.10	0	23.32	456.7	0.0	0.0	1497.
10	11.08	31.33	10	23.93	398.8	0.45	0.02	1490.
20	9.23	31.75	20	24.57	338.6	0.81	0.08	1484.
30	8.96	32.00	30	24.80	316.2	1.14	0.16	1483.
50	7.90	32.52	50	25.37	262.6	1.71	0.39	1480.
75	7.27	33.11	75	25.92	210.7	2.30	0.77	1479.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	13.41	31.10	39.	8.59	32.28
2.	13.41	31.11	40.	8.55	32.31
4.	13.41	31.11	41.	8.37	32.35
5.	13.29	31.12	43.	8.21	32.42
6.	13.09	31.13	45.	8.14	32.46
7.	12.80	31.14	46.	8.05	32.47
8.	12.18	31.15	47.	7.99	32.49
9.	11.85	31.19	48.	7.95	32.50
10.	11.08	31.33	51.	7.87	32.53
11.	11.02	31.38	52.	7.86	32.53
12.	10.79	31.43	54.	7.81	32.55
13.	9.91	31.46	55.	7.78	32.57
14.	9.86	31.53	56.	7.48	32.59
15.	9.68	31.59	57.	7.38	32.61
16.	9.52	31.62	59.	7.28	32.66
17.	9.47	31.64	61.	7.27	32.72
18.	9.39	31.68	62.	7.27	32.74
19.	9.32	31.74	63.	7.28	32.77
20.	9.23	31.75	64.	7.20	32.81
21.	9.19	31.77	65.	7.16	32.84
23.	9.12	31.81	66.	7.16	32.90
24.	9.09	31.84	67.	7.16	32.95
25.	9.07	31.85	68.	7.21	32.97
26.	9.06	31.83	70.	7.24	33.02
27.	9.04	31.87	71.	7.25	33.05
29.	8.99	31.97	73.	7.26	33.07
30.	8.96	32.00	75.	7.27	33.11
32.	8.88	32.06	78.	7.27	33.16
33.	8.87	32.08	79.	7.27	33.17
34.	8.79	32.16	81.	7.25	33.20
35.	8.76	32.18	82.	7.24	33.21
36.	8.79	32.23	83.	7.22	33.23
38.	8.70	32.26	85.	7.20	33.25



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REFERENCE NO. 76- 7- 3

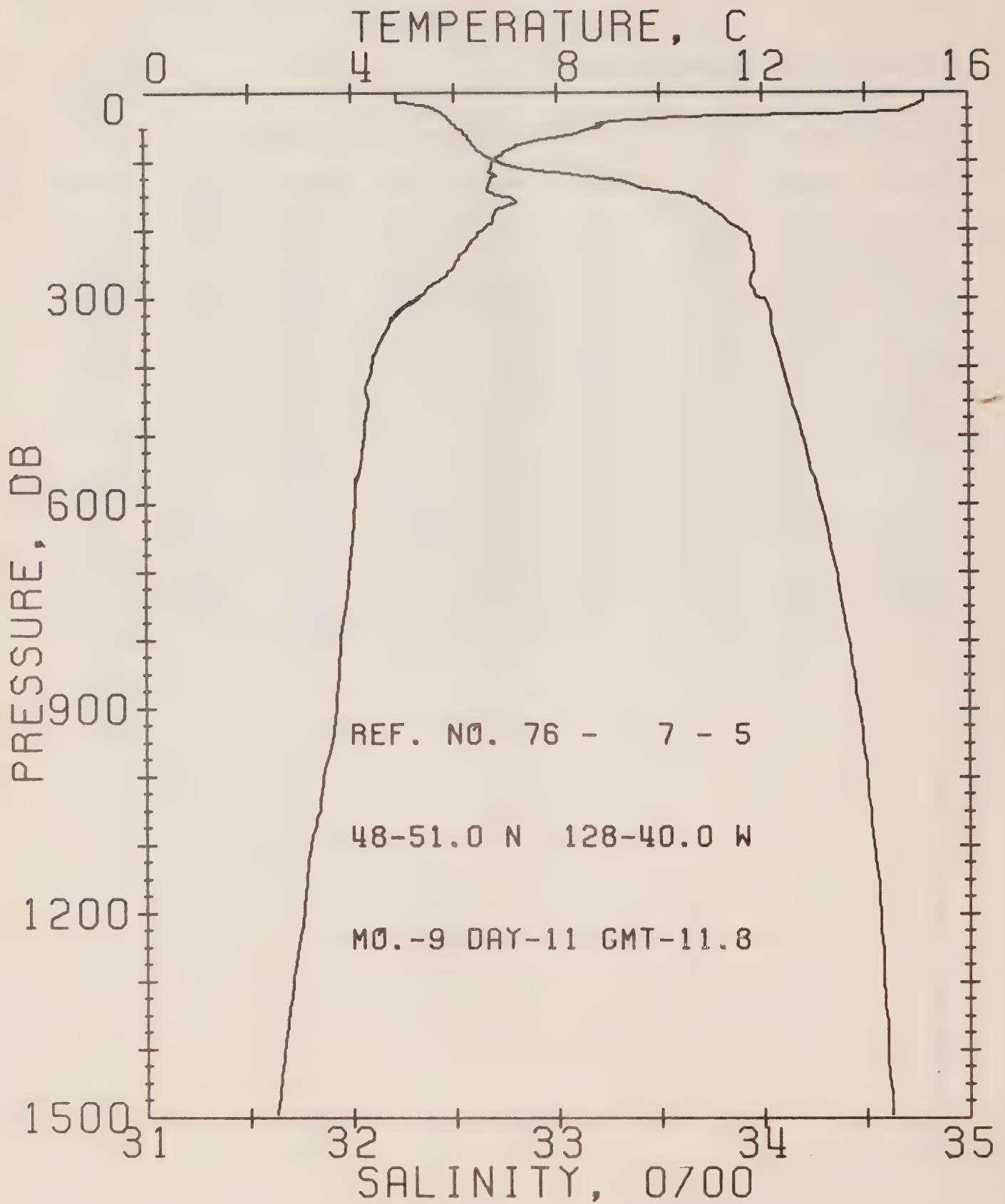
DATE 11/ 9/76

STATION 3

POSITION 48-42.0N, 126-40.0W GMT 2.6

RESULTS OF STP CAST 183 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.84	32.04	0	23.75	415.7	0.0	0.0	1503.
10	14.81	32.04	10	23.76	415.6	0.42	0.02	1503.
20	14.65	32.05	20	23.80	412.1	0.83	0.08	1503.
30	11.18	32.16	30	24.56	339.5	1.21	0.18	1492.
50	8.39	32.37	50	25.18	280.7	1.81	0.42	1482.
75	7.28	32.52	75	25.45	254.8	2.48	0.85	1478.
100	7.18	32.94	99	25.80	222.1	3.08	1.38	1479.
125	7.29	33.44	124	26.17	187.3	3.59	1.96	1480.
150	6.98	33.62	149	26.36	169.6	4.03	2.58	1480.
175	6.81	33.80	174	26.52	154.6	4.44	3.25	1480.
200	6.58	33.85	199	26.59	148.4	4.81	3.98	1479.
225	6.33	33.87	224	26.64	143.9	5.18	4.77	1479.
250	6.03	33.89	248	26.70	138.6	5.53	5.62	1478.
300	5.40	33.98	298	26.85	124.9	6.20	7.49	1476.
400	4.95	34.04	397	26.95	116.1	7.40	11.77	1476.
500	4.60	34.11	496	27.04	107.9	8.52	16.91	1476.
600	4.40	34.18	595	27.12	101.4	9.57	22.75	1477.
800	3.99	34.31	793	27.26	89.1	11.48	36.34	1479.
1000	3.55	34.39	991	27.37	79.6	13.16	51.77	1481.



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REFERENCE NO. 76- 7- 5

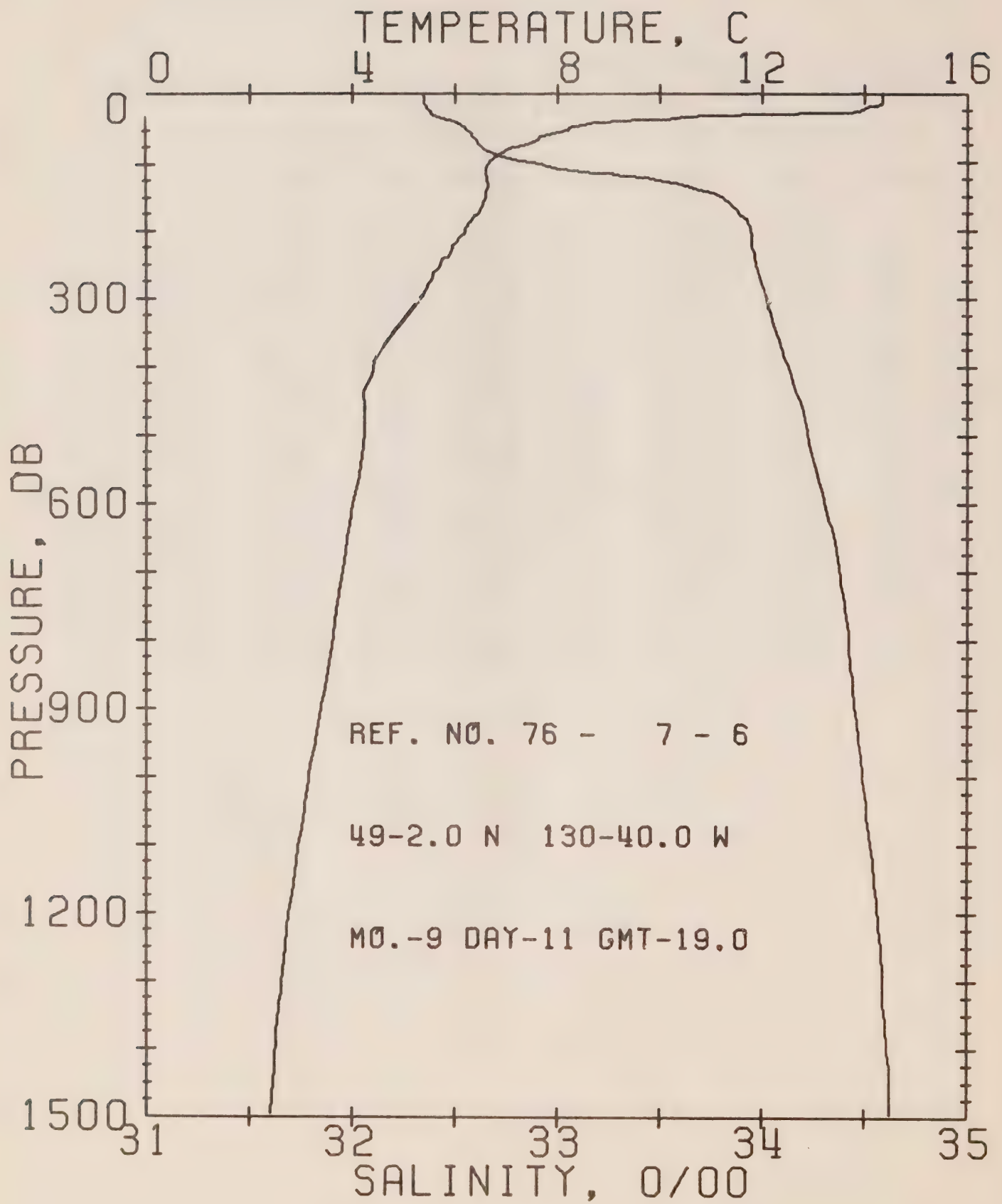
DATE 11/ 9/76

STATION 5

POSITION 48-51.0N, 128-40.0W GMT 11.8

RESULTS OF STP CAST 212 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	15.06	32.22	0	23.84	407.0	0.0	0.0	1504.
10	15.06	32.22	10	23.84	407.5	0.41	0.02	1504.
20	14.85	32.37	20	24.00	392.5	0.81	0.08	1504.
30	14.06	32.44	30	24.22	371.7	1.20	0.18	1502.
50	8.77	32.51	50	25.23	275.9	1.80	0.42	1483.
75	7.23	32.59	75	25.51	249.1	2.45	0.84	1478.
100	6.68	32.70	99	25.68	233.6	3.06	1.38	1476.
125	6.64	33.21	124	26.08	195.7	3.61	2.00	1477.
150	6.75	33.64	149	26.41	165.4	4.05	2.63	1479.
175	6.72	33.79	174	26.53	154.2	4.46	3.30	1479.
200	6.52	33.90	199	26.64	143.9	4.84	4.02	1479.
225	6.19	33.95	224	26.72	136.2	5.18	4.77	1478.
250	5.97	33.96	248	26.76	132.9	5.52	5.58	1478.
300	5.05	34.01	298	26.91	118.8	6.17	7.39	1475.
400	4.34	34.09	397	27.06	105.5	7.28	11.35	1474.
500	4.20	34.19	496	27.15	97.7	8.29	16.00	1475.
600	4.01	34.28	595	27.24	89.7	9.23	21.24	1476.
800	3.75	34.41	793	27.37	78.5	10.91	33.20	1478.
1000	3.41	34.50	991	27.48	69.5	12.39	46.80	1480.
1200	3.02	34.57	1188	27.56	61.9	13.70	61.46	1482.



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REFERENCE NO. 76- 7- 6

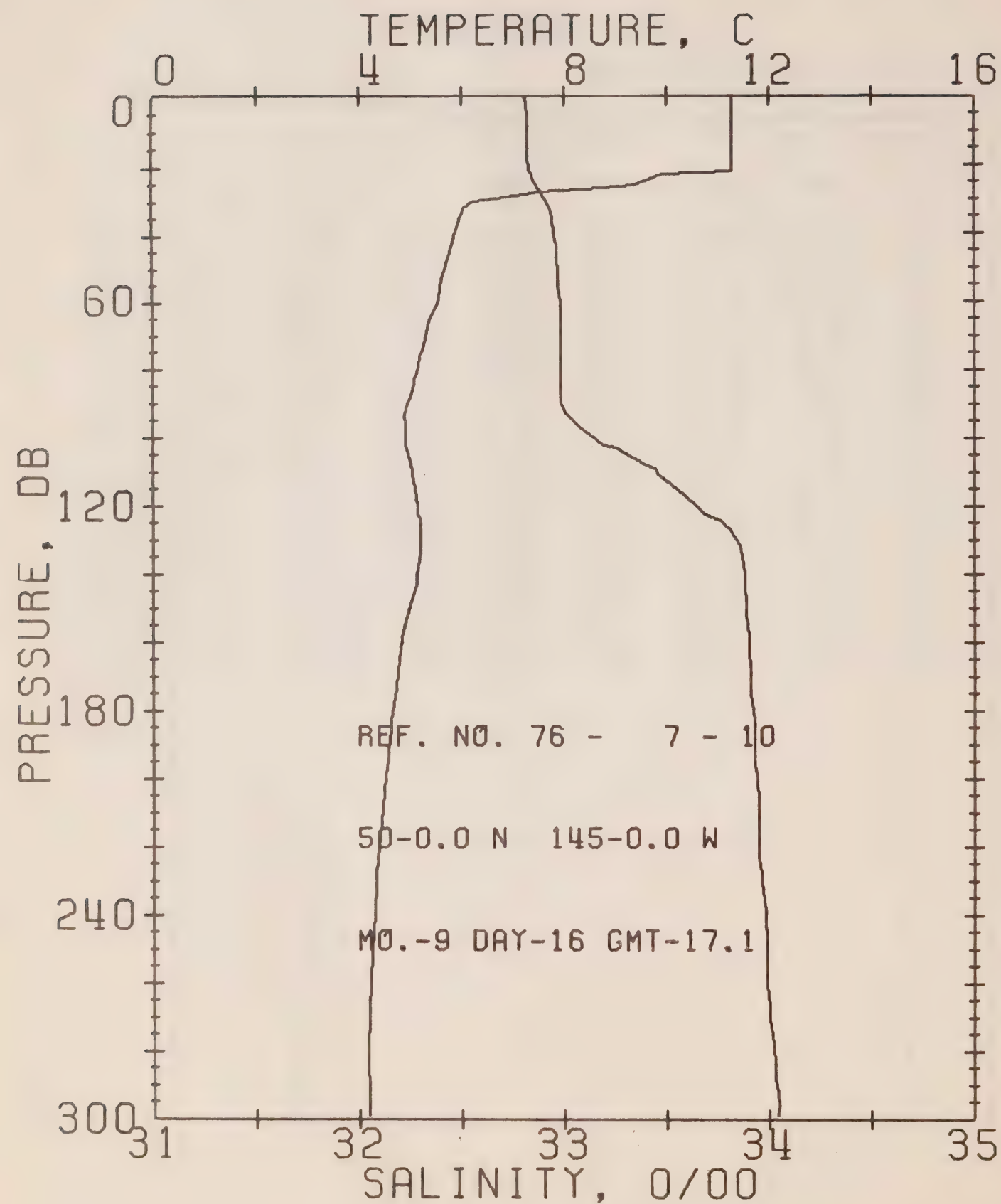
DATE 11/ 9/76

STATION 6

POSITION 49- 2.0N, 130-40.0W GMT 19.0

RESULTS OF STP CAST 193 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.26	32.34	0	24.10	382.0	0.0	0.0	1502.
10	14.26	32.35	10	24.11	381.8	0.38	0.02	1502.
20	13.93	32.36	20	24.19	374.8	0.76	0.08	1501.
30	12.46	32.38	30	24.49	345.8	1.13	0.17	1496.
50	8.14	32.55	50	25.36	263.8	1.71	0.41	1481.
75	7.30	32.62	75	25.53	247.9	2.35	0.81	1478.
100	6.59	32.87	99	25.82	220.1	2.94	1.34	1476.
125	6.55	33.47	124	26.30	175.1	3.44	1.91	1477.
150	6.51	33.79	149	26.56	150.8	3.85	2.47	1478.
175	6.38	33.89	174	26.65	142.3	4.21	3.08	1478.
200	6.12	33.94	199	26.72	135.7	4.56	3.74	1477.
225	5.89	33.95	223	26.76	132.4	4.89	4.46	1477.
250	5.64	33.97	248	26.81	128.2	5.22	5.25	1476.
300	5.09	33.99	298	26.89	120.7	5.85	7.01	1475.
400	4.37	34.13	397	27.08	103.2	6.95	10.93	1474.
500	4.20	34.22	496	27.17	95.2	7.93	15.44	1475.
600	3.98	34.30	595	27.26	87.7	8.85	20.57	1476.
800	3.58	34.42	793	27.39	76.2	10.47	32.11	1477.
1000	3.14	34.49	990	27.49	67.5	11.91	45.31	1479.
1200	2.76	34.56	1188	27.58	59.1	13.18	59.46	1481.



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REFERENCE NO. 76- 7- 10

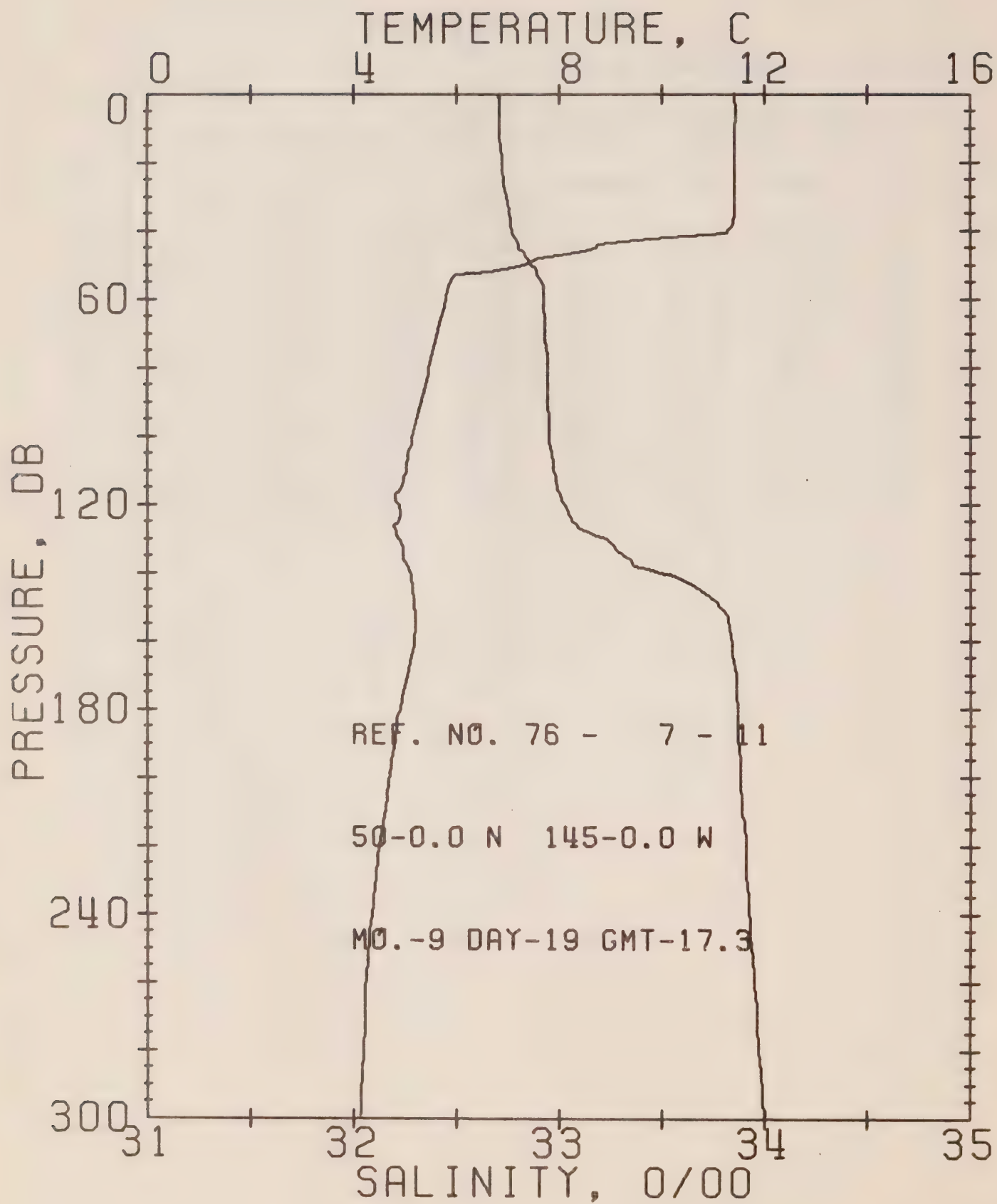
DATE 16/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.1

RESULTS OF STP CAST 90 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.19	32.81	0	25.06	290.8	0.0	0.0	1492.
10	11.19	32.82	10	25.07	290.5	0.29	0.01	1492.
20	11.19	32.82	20	25.07	290.4	0.58	0.06	1492.
30	6.58	32.90	30	25.85	216.8	0.84	0.12	1475.
50	5.59	32.97	50	26.02	200.3	1.25	0.29	1472.
75	5.12	32.98	75	26.09	194.3	1.74	0.60	1470.
100	4.84	33.14	99	26.25	179.3	2.22	1.03	1470.
125	5.13	33.78	124	26.72	135.2	2.61	1.47	1472.
150	4.90	33.89	149	26.83	124.4	2.93	1.92	1472.
175	4.62	33.91	174	26.88	120.1	3.23	2.43	1471.
200	4.43	33.94	199	26.92	116.1	3.53	2.99	1471.
225	4.28	33.95	223	26.95	113.7	3.81	3.61	1470.
250	4.20	33.99	248	26.99	110.4	4.09	4.29	1470.



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REFERENCE NO. 76- 7- 11

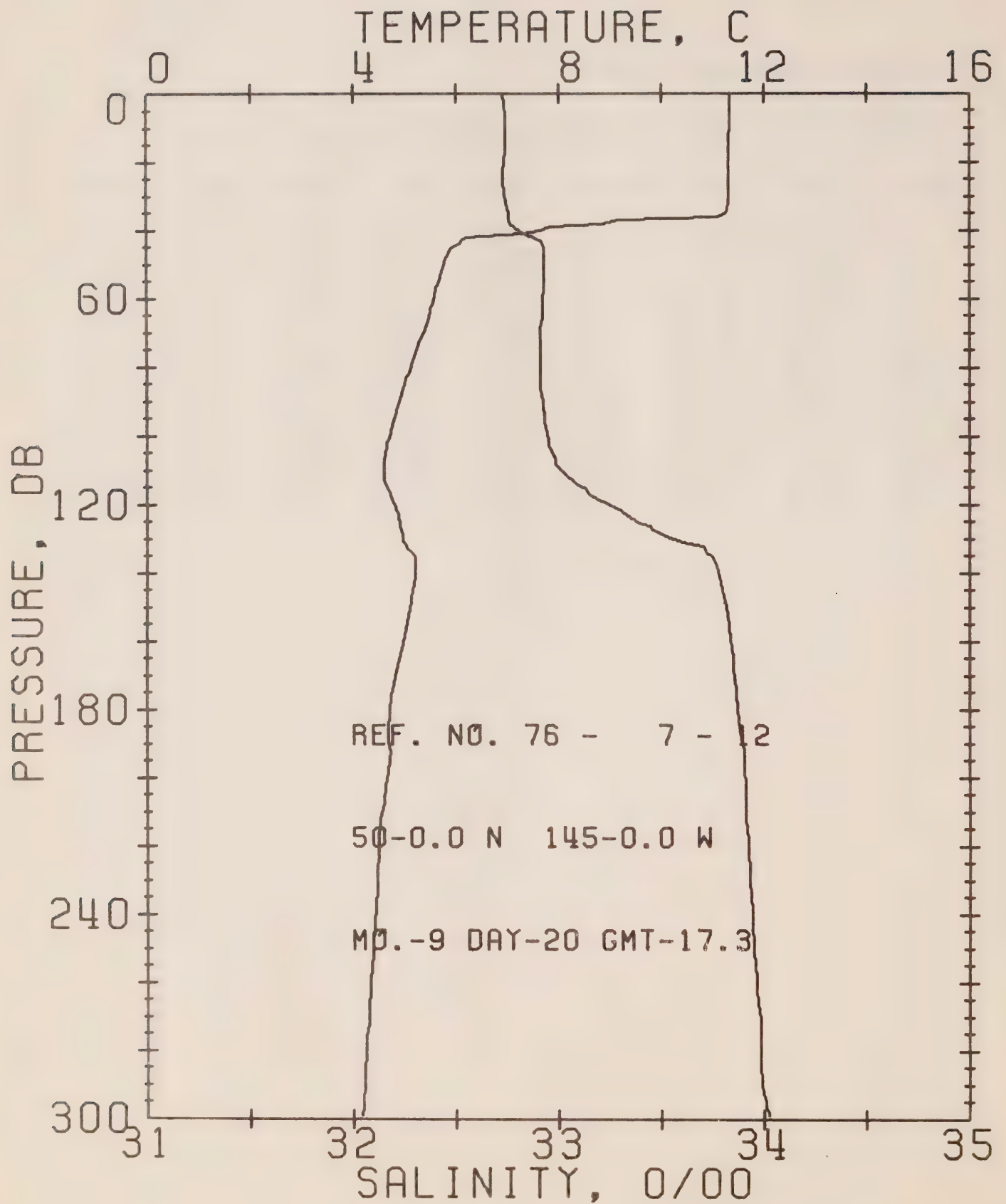
DATE 19/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 106 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.33	32.71	0	24.96	300.6	0.0	0.0	1492.
10	11.33	32.71	10	24.96	301.0	0.30	0.02	1492.
20	11.33	32.72	20	24.97	300.5	0.60	0.06	1493.
30	11.33	32.74	30	24.98	299.3	0.90	0.14	1493.
50	7.23	32.86	50	25.73	228.4	1.46	0.36	1478.
75	5.45	32.94	75	26.01	201.3	1.97	0.69	1471.
100	5.06	32.95	99	26.07	196.1	2.47	1.13	1470.
125	4.79	33.07	124	26.20	184.5	2.95	1.68	1470.
150	5.12	33.78	149	26.72	135.2	3.35	2.24	1472.
175	4.89	33.86	174	26.81	126.8	3.67	2.78	1472.
200	4.61	33.88	199	26.86	122.5	3.98	3.37	1471.
225	4.39	33.91	223	26.90	118.2	4.28	4.02	1471.
250	4.23	33.94	248	26.94	114.8	4.58	4.73	1470.



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REFERENCE NO. 76- 7- 12

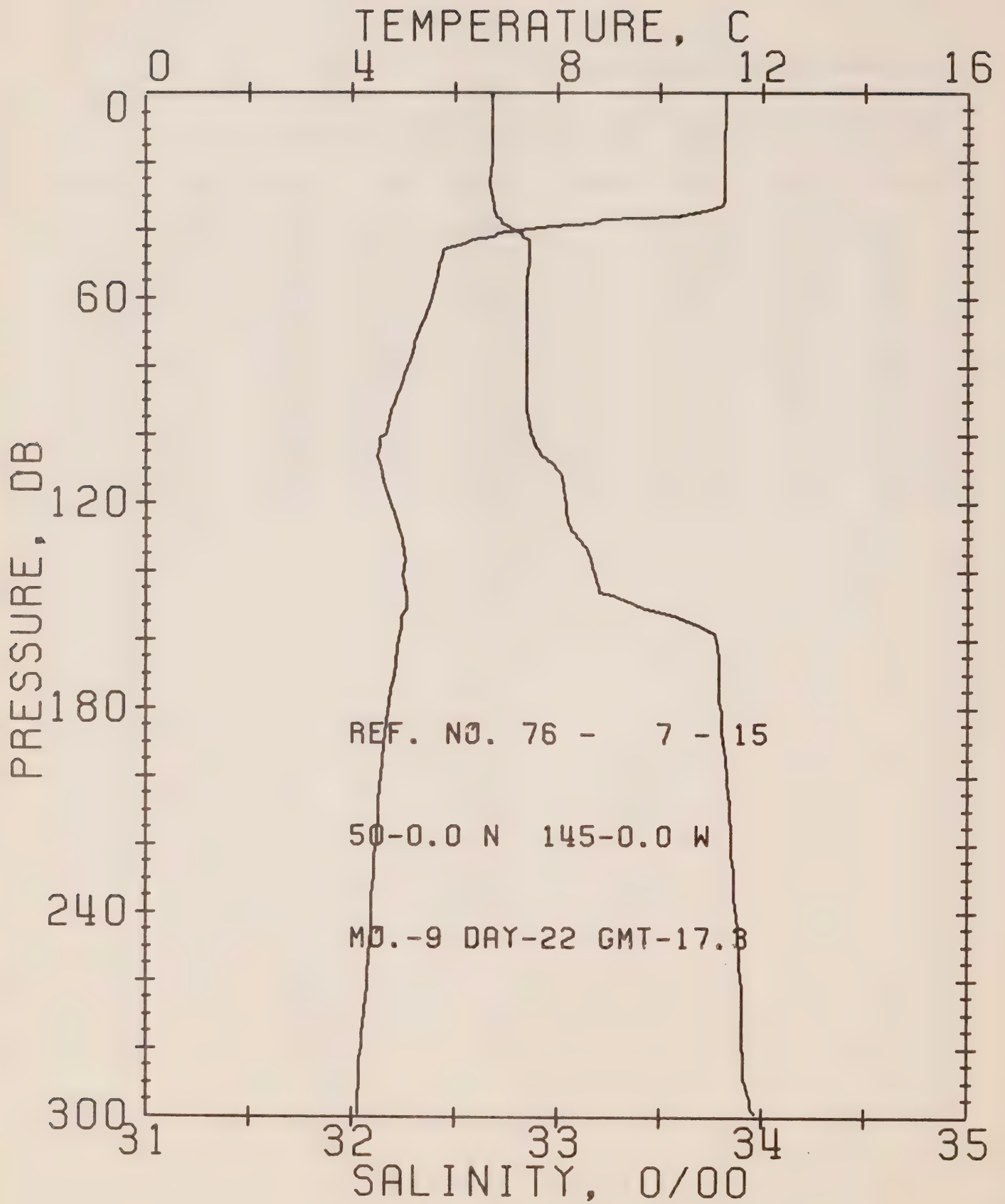
DATE 20/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 106 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.23	32.73	0	24.99	297.4	0.0	0.0	1492.
10	11.23	32.74	10	25.00	297.0	0.30	0.02	1492.
20	11.22	32.73	20	25.00	297.5	0.59	0.06	1492.
30	11.22	32.74	30	25.00	297.6	0.89	0.14	1492.
50	5.66	32.93	50	25.98	203.8	1.38	0.33	1472.
75	5.13	32.91	75	26.03	199.7	1.89	0.65	1470.
100	4.62	32.94	99	26.11	192.0	2.38	1.09	1468.
125	4.83	33.39	124	26.44	160.9	2.83	1.61	1470.
150	5.03	33.81	149	26.76	131.5	3.18	2.10	1472.
175	4.67	33.86	174	26.83	124.4	3.50	2.62	1471.
200	4.57	33.90	199	26.88	120.3	3.80	3.21	1471.
225	4.41	33.93	223	26.91	117.2	4.10	3.85	1471.
250	4.32	33.95	248	26.94	114.8	4.39	4.55	1471.



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REFERENCE NO. 76- 7- 15

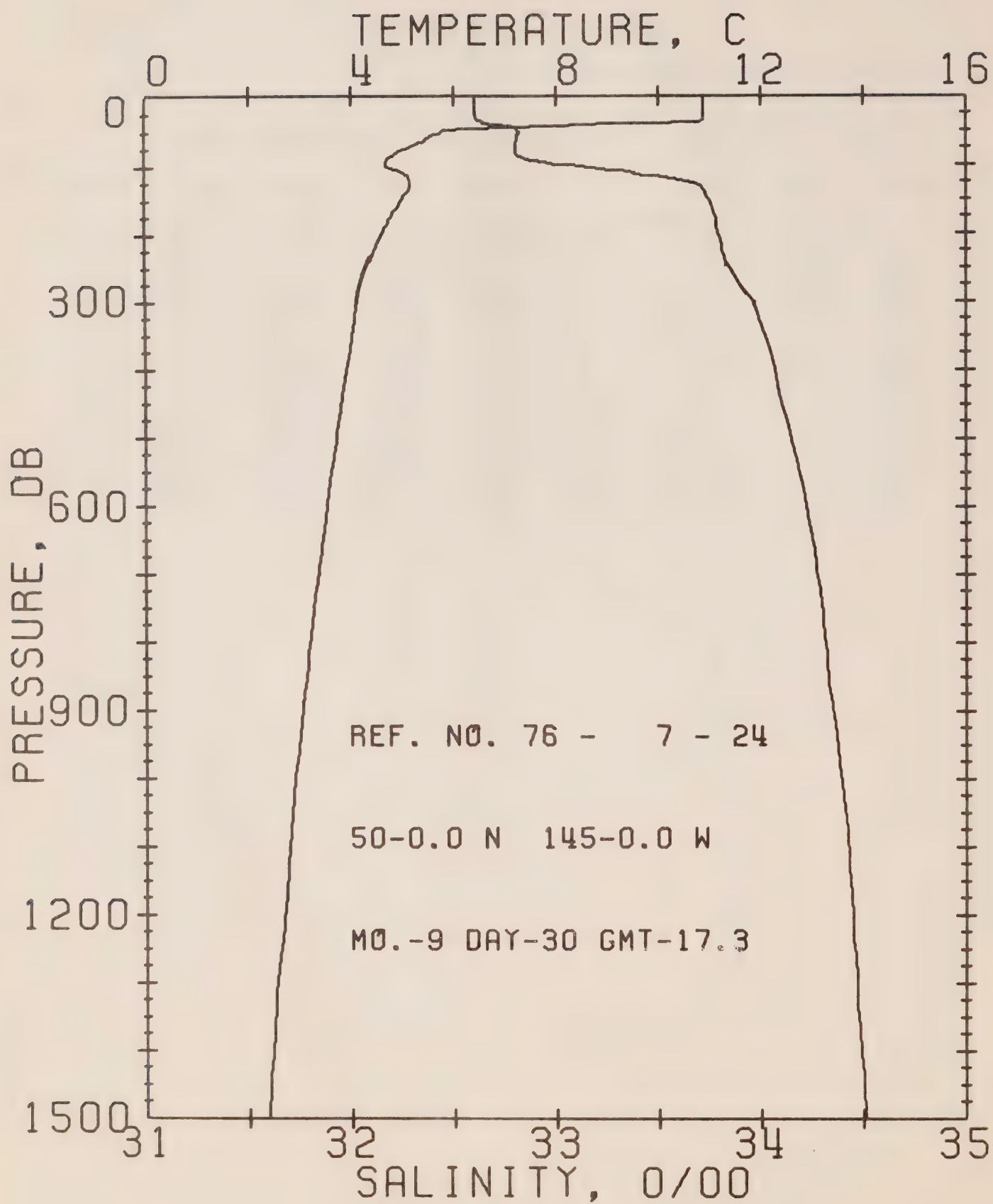
DATE 22/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 112 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.19	32.68	0	24.96	300.4	0.0	0.0	1492.
10	11.18	32.68	10	24.96	300.7	0.30	0.02	1492.
20	11.17	32.68	20	24.96	300.7	0.60	0.06	1492.
30	11.16	32.68	30	24.96	301.0	0.90	0.14	1492.
50	5.61	32.86	50	25.94	208.5	1.40	0.34	1471.
75	5.09	32.85	75	25.99	203.7	1.91	0.66	1470.
100	4.56	32.87	99	26.06	196.8	2.42	1.11	1468.
125	4.81	33.05	124	26.18	186.2	2.89	1.65	1470.
150	5.00	33.39	149	26.42	163.0	3.33	2.28	1471.
175	4.67	33.79	174	26.78	129.7	3.67	2.84	1471.
200	4.49	33.83	199	26.83	125.0	3.99	3.45	1471.
225	4.39	33.85	223	26.86	122.3	4.30	4.12	1471.
250	4.29	33.88	248	26.89	119.1	4.60	4.85	1471.



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REFERENCE NO. 76- 7- 24

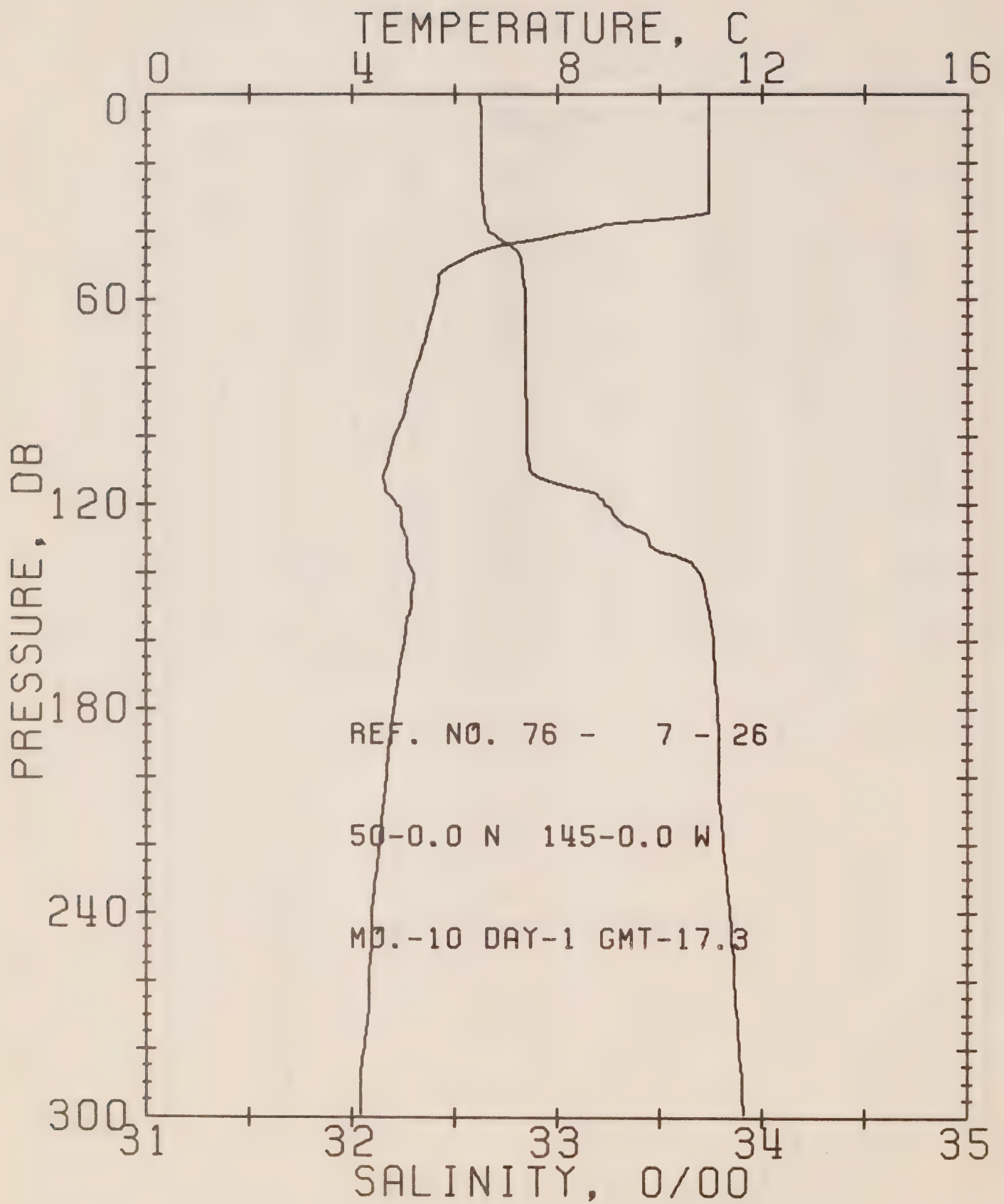
DATE 30/ 9/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 175 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.79	32.60	0	24.97	299.6	0.0	0.0	1490.
10	10.79	32.60	10	24.97	300.0	0.30	0.02	1490.
20	10.79	32.60	20	24.97	300.2	0.60	0.06	1491.
30	10.80	32.61	30	24.97	300.1	0.90	0.14	1491.
50	5.97	32.81	50	25.85	216.5	1.44	0.35	1473.
75	5.04	32.80	75	25.95	206.9	1.97	0.69	1469.
100	4.60	33.00	99	26.16	187.5	2.47	1.14	1468.
125	5.09	33.67	124	26.64	142.7	2.88	1.60	1472.
150	4.93	33.74	149	26.71	136.0	3.22	2.09	1471.
175	4.72	33.77	174	26.76	131.5	3.56	2.64	1471.
200	4.54	33.79	199	26.79	128.5	3.88	3.26	1471.
225	4.40	33.81	223	26.82	125.7	4.20	3.95	1471.
250	4.34	33.83	248	26.85	123.8	4.51	4.70	1471.
300	4.08	33.95	298	26.97	112.5	5.11	6.38	1471.
400	3.85	34.07	397	27.09	102.1	6.18	10.18	1472.
500	3.68	34.15	496	27.17	95.3	7.17	14.71	1473.
600	3.49	34.22	595	27.24	88.5	8.08	19.83	1473.
800	3.17	34.31	793	27.35	79.6	9.75	31.73	1475.
1000	2.88	34.39	990	27.43	72.1	11.27	45.62	1478.
1200	2.68	34.45	1188	27.50	66.7	12.65	61.10	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 26

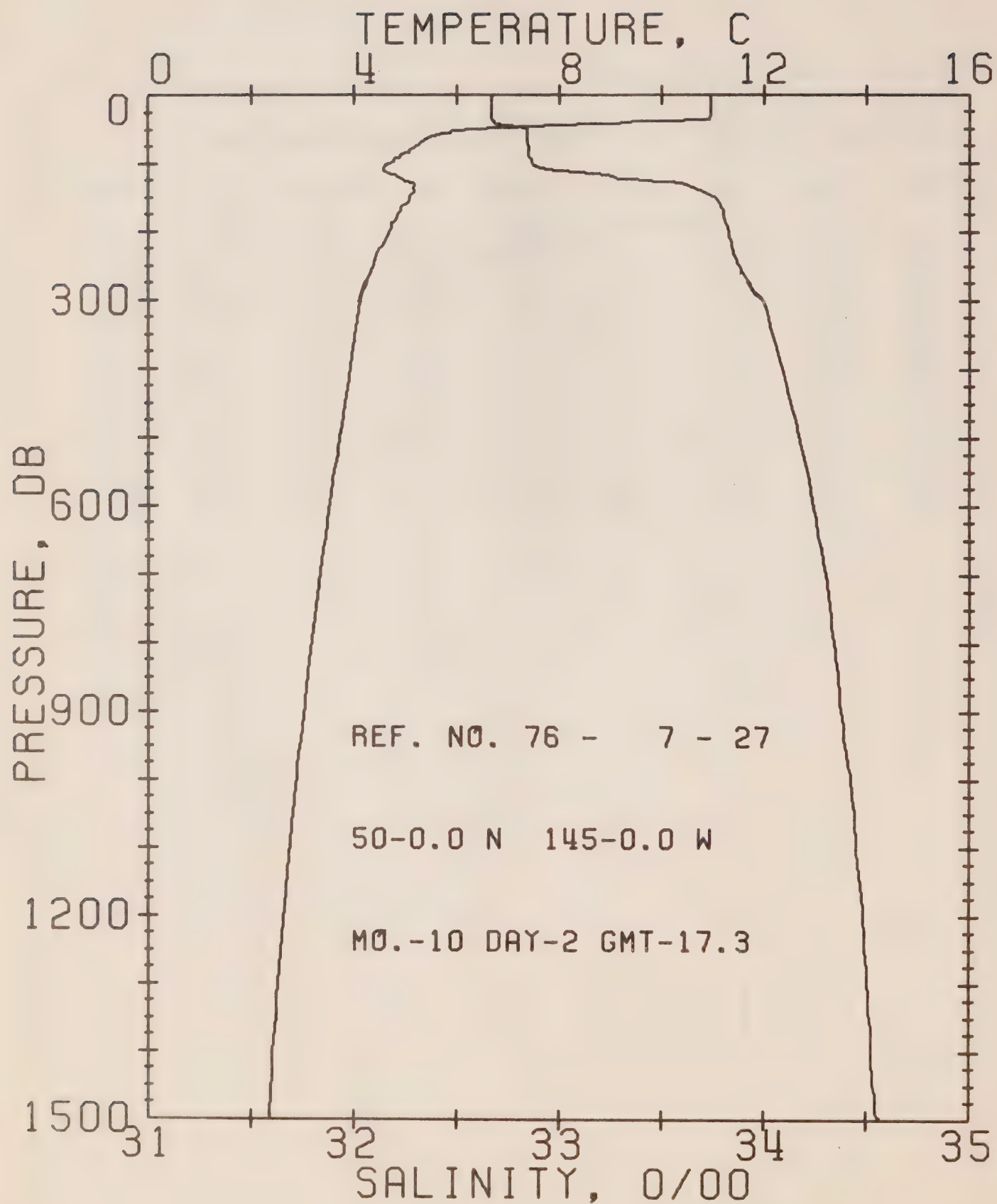
DATE 1/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 114 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.87	32.62	0	24.97	299.5	0.0	0.0	1490.
10	10.87	32.63	10	24.98	299.2	0.30	0.02	1491.
20	10.87	32.63	20	24.98	299.4	0.60	0.06	1491.
30	10.87	32.63	30	24.98	299.3	0.90	0.14	1491.
50	5.90	32.82	50	25.87	214.5	1.42	0.34	1473.
75	5.26	32.84	75	25.96	206.3	1.94	0.68	1470.
100	4.73	32.85	99	26.03	200.1	2.45	1.13	1469.
125	4.89	33.31	124	26.37	167.5	2.91	1.66	1470.
150	5.07	33.73	149	26.69	138.1	3.29	2.18	1472.
175	4.79	33.78	174	26.75	132.0	3.62	2.74	1471.
200	4.59	33.79	199	26.79	129.1	3.95	3.36	1471.
225	4.44	33.82	223	26.82	125.7	4.27	4.05	1471.
250	4.30	33.85	248	26.87	121.8	4.58	4.80	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 27

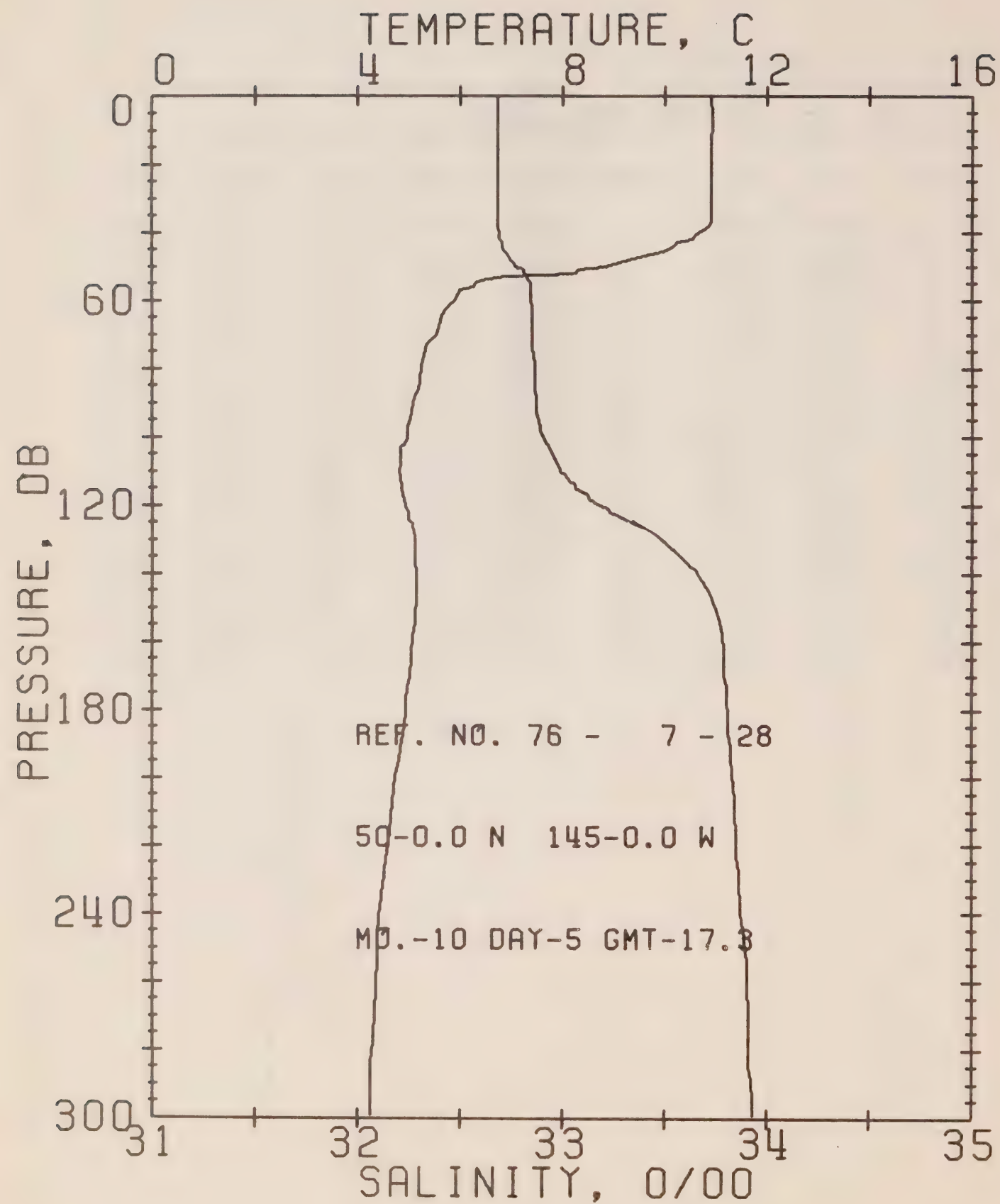
DATE 2/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 173 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.86	32.67	0	25.01	295.6	0.0	0.0	1491.
10	10.86	32.67	10	25.01	296.0	0.30	0.02	1491.
20	10.86	32.67	20	25.01	296.2	0.59	0.06	1491.
30	10.86	32.67	30	25.01	296.4	0.89	0.14	1491.
50	6.49	32.84	50	25.81	220.5	1.42	0.35	1475.
75	5.13	32.84	75	25.98	204.6	1.95	0.68	1470.
100	4.64	32.86	99	26.05	198.2	2.45	1.13	1468.
125	4.92	33.49	124	26.51	154.4	2.90	1.65	1471.
150	5.02	33.76	149	26.72	135.5	3.26	2.15	1472.
175	4.78	33.80	174	26.77	130.1	3.59	2.69	1471.
200	4.61	33.83	199	26.82	126.3	3.91	3.31	1471.
225	4.44	33.84	223	26.84	123.8	4.22	3.98	1471.
250	4.29	33.88	248	26.89	119.7	4.53	4.72	1471.
300	4.09	33.96	298	26.98	111.9	5.11	6.36	1471.
400	3.87	34.09	397	27.10	100.8	6.16	10.10	1472.
500	3.69	34.17	496	27.18	93.7	7.13	14.54	1473.
600	3.48	34.24	595	27.26	87.1	8.03	19.58	1473.
800	3.15	34.34	793	27.37	77.1	9.67	31.21	1475.
1000	2.85	34.42	990	27.46	69.4	11.14	44.68	1478.
1200	2.61	34.48	1188	27.53	63.7	12.47	59.57	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 28

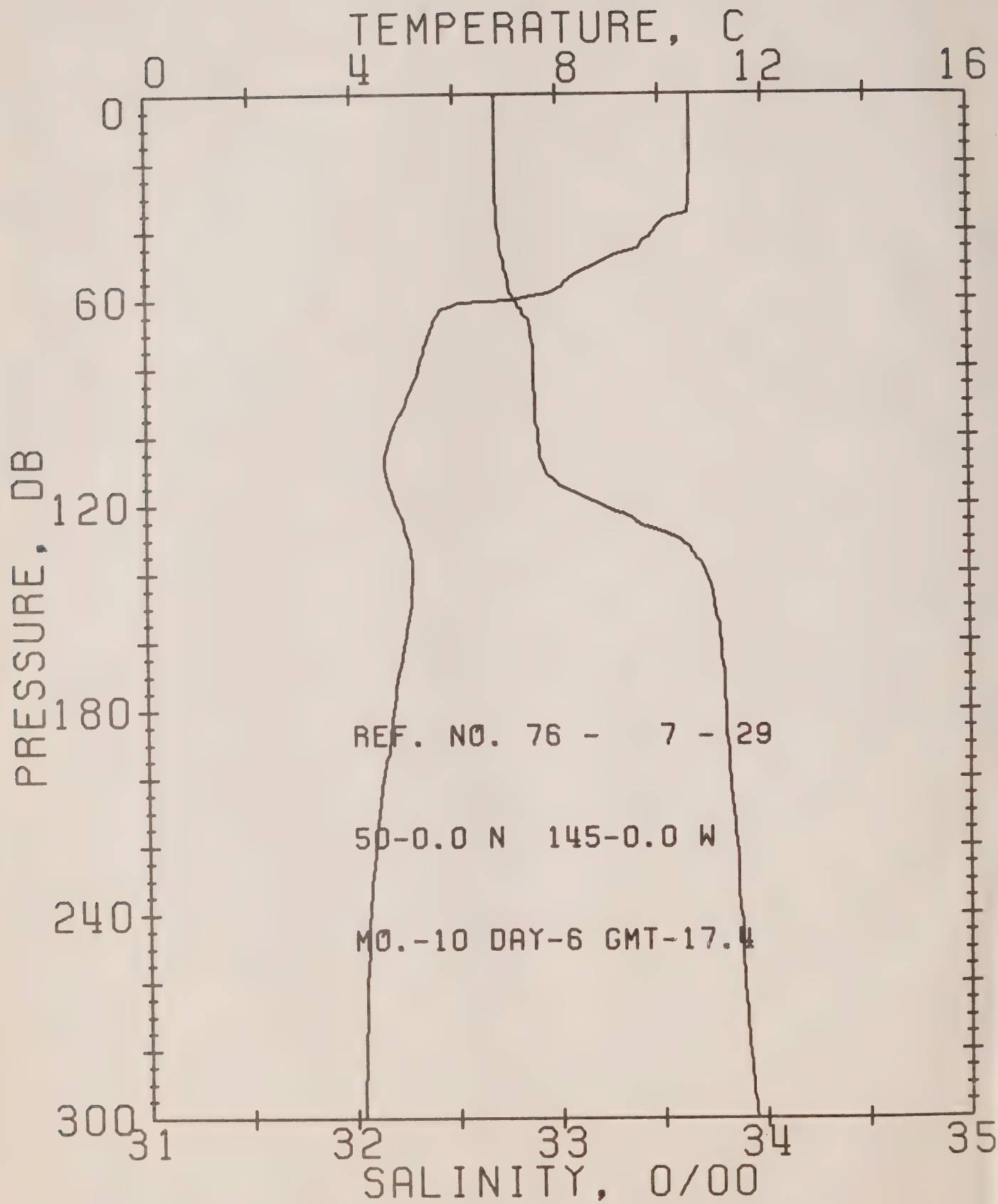
DATE 5/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 112 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL.	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.82	32.68	0	25.03	294.3	0.0	0.0	1490.
10	10.83	32.68	10	25.03	294.8	0.29	0.02	1491.
20	10.82	32.68	20	25.03	294.9	0.59	0.06	1491.
30	10.82	32.68	30	25.03	295.1	0.88	0.14	1491.
50	8.74	32.77	50	25.44	256.1	1.46	0.37	1484.
75	5.21	32.85	75	25.98	204.9	1.99	0.71	1470.
100	4.88	32.90	99	26.05	197.9	2.50	1.16	1469.
125	4.99	33.34	124	26.39	166.4	2.96	1.69	1471.
150	5.06	33.74	149	26.70	137.3	3.33	2.20	1472.
175	4.89	33.80	174	26.76	131.3	3.66	2.76	1472.
200	4.66	33.83	199	26.81	126.7	3.99	3.37	1471.
225	4.47	33.85	223	26.85	123.2	4.30	4.05	1471.
250	4.32	33.89	248	26.90	118.8	4.60	4.78	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 29

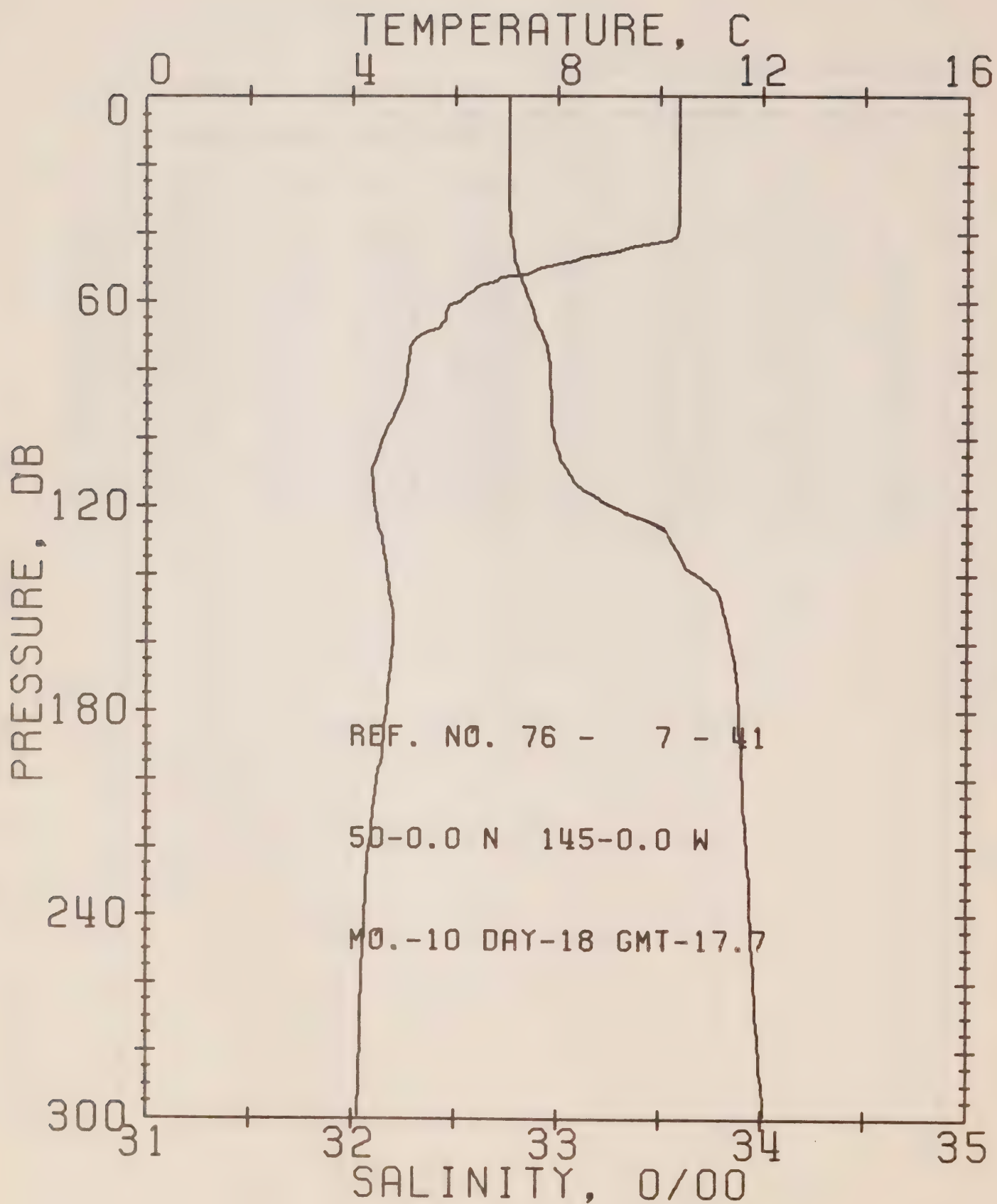
DATE 6/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.4

RESULTS OF STP CAST 111 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.51	32.70	0	25.10	287.6	0.0	0.0	1489.
10	10.51	32.70	10	25.10	288.0	0.29	0.01	1489.
20	10.51	32.70	20	25.10	288.2	0.58	0.06	1490.
30	10.51	32.70	30	25.10	288.4	0.86	0.13	1490.
50	8.64	32.74	50	25.43	256.8	1.42	0.36	1483.
75	5.30	32.88	75	25.99	203.8	1.98	0.71	1471.
100	4.65	32.90	99	26.08	195.5	2.48	1.16	1468.
125	4.90	33.38	124	26.43	162.4	2.94	1.68	1470.
150	5.03	33.75	149	26.71	136.2	3.30	2.18	1472.
175	4.73	33.80	174	26.78	129.6	3.63	2.73	1471.
200	4.48	33.83	199	26.83	124.8	3.95	3.34	1471.
225	4.29	33.86	223	26.87	120.8	4.25	4.00	1470.
250	4.18	33.88	248	26.90	118.5	4.55	4.73	1470.
300	4.09	33.95	298	26.97	112.6	5.13	6.35	1471.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 41

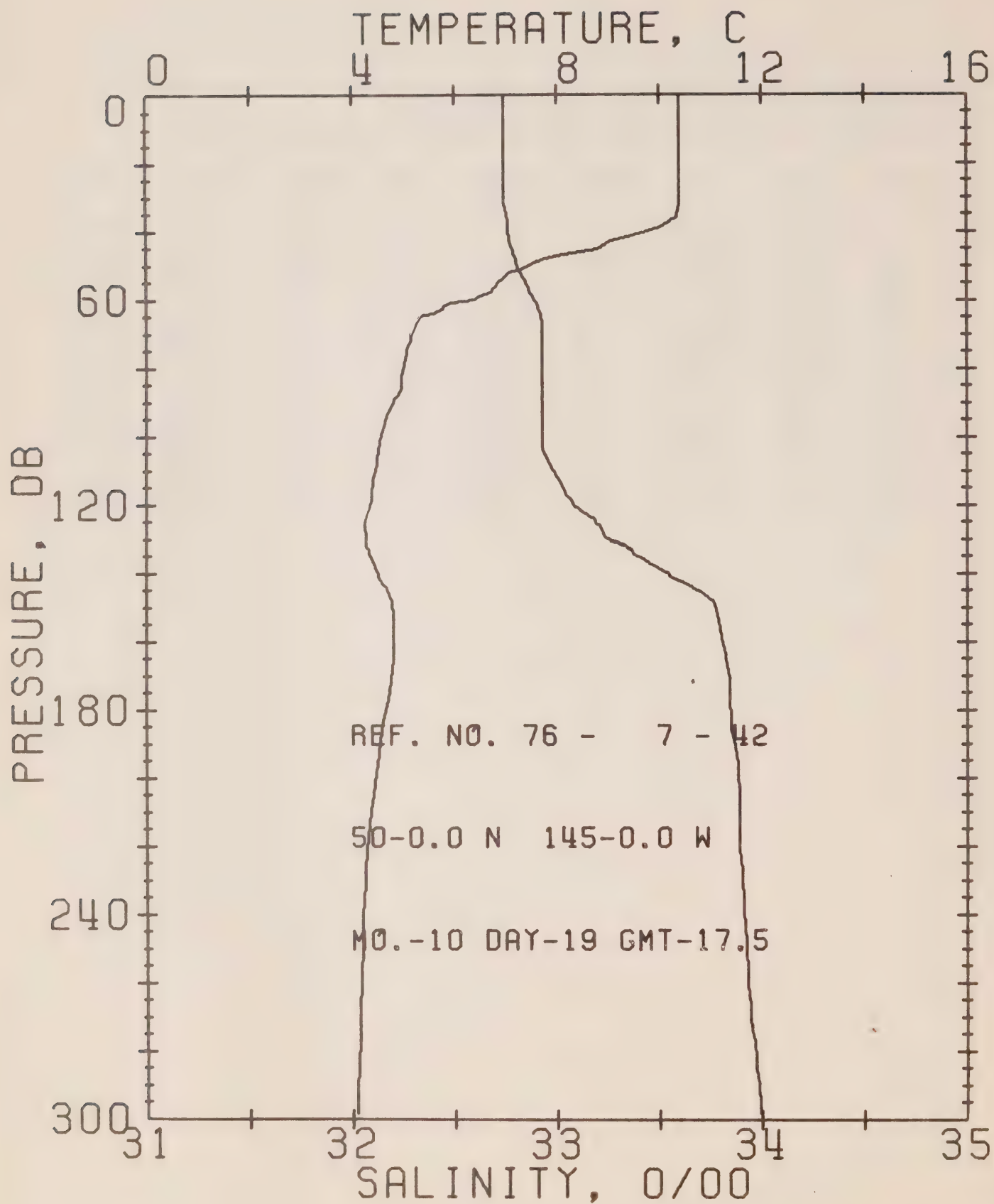
DATE 18/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.7

RESULTS OF STP CAST 104 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.29	32.76	0	25.18	279.6	0.0	0.0	1489.
10	10.29	32.76	10	25.18	280.1	0.28	0.01	1489.
20	10.29	32.76	20	25.18	280.2	0.56	0.06	1489.
30	10.28	32.76	30	25.18	280.4	0.84	0.13	1489.
50	7.61	32.80	50	25.63	237.9	1.38	0.35	1479.
75	5.02	32.95	75	26.08	195.3	1.91	0.68	1470.
100	4.52	32.98	99	26.15	188.1	2.39	1.11	1468.
125	4.43	33.41	124	26.50	155.2	2.83	1.61	1469.
150	4.73	33.81	149	26.78	128.9	3.18	2.10	1471.
175	4.63	33.88	174	26.85	122.5	3.49	2.62	1471.
200	4.42	33.90	199	26.90	118.7	3.79	3.19	1470.
225	4.24	33.93	223	26.94	115.1	4.08	3.83	1470.
250	4.16	33.95	248	26.96	112.9	4.37	4.52	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 42

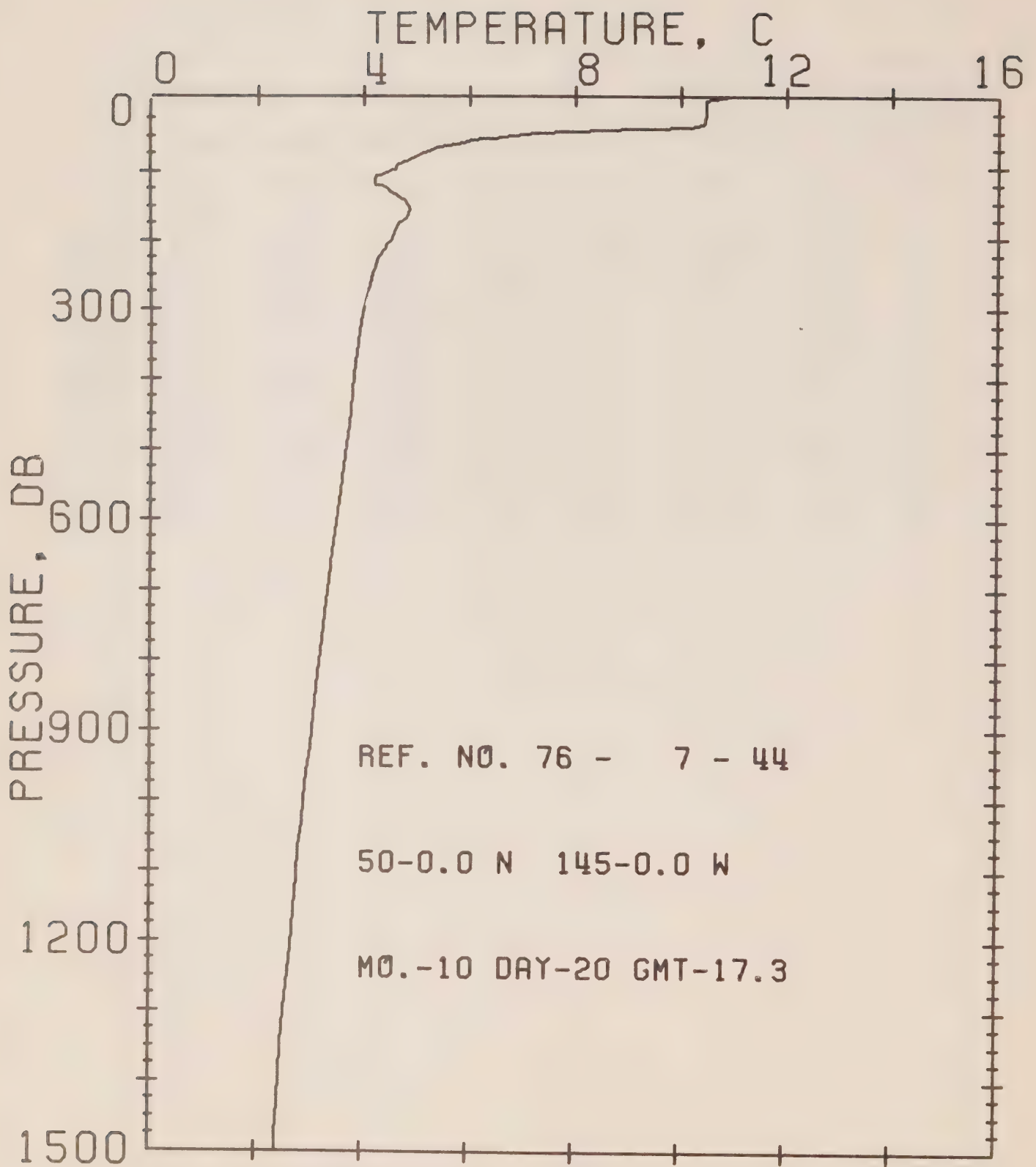
DATE 19/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 105 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.30	32.74	0	25.16	281.3	0.0	0.0	1489.
10	10.31	32.74	10	25.16	281.9	0.28	0.01	1489.
20	10.32	32.74	20	25.16	282.2	0.56	0.06	1489.
30	10.31	32.74	30	25.16	282.2	0.85	0.13	1489.
50	7.41	32.80	50	25.66	234.9	1.38	0.34	1479.
75	4.99	32.93	75	26.06	196.6	1.90	0.68	1469.
100	4.49	32.93	99	26.12	191.6	2.39	1.11	1468.
125	4.18	33.19	124	26.35	169.2	2.85	1.64	1467.
150	4.72	33.77	149	26.76	131.5	3.22	2.16	1471.
175	4.66	33.84	174	26.82	125.7	3.55	2.69	1471.
200	4.38	33.88	199	26.88	119.8	3.85	3.28	1470.
225	4.20	33.90	223	26.91	117.2	4.15	3.92	1470.
250	4.13	33.92	248	26.94	114.8	4.44	4.62	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 44

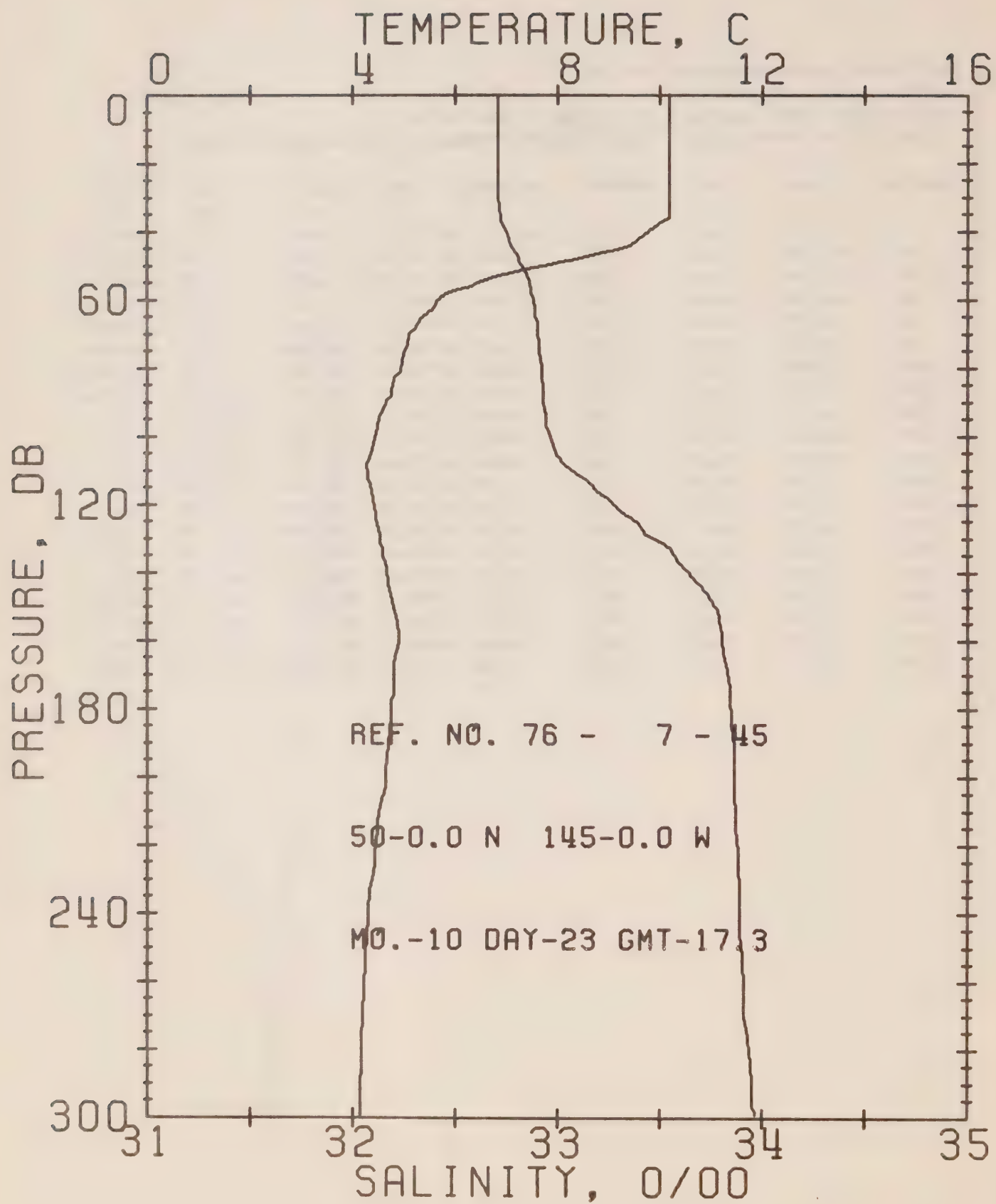
DATE 20/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 117 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.83	0.0	0	-0.31	2767.0	0.0	0.0	1451.
10	10.38	0.0	10	-0.27	2762.6	2.76	0.14	1449.
20	10.38	0.0	20	-0.27	2762.3	5.53	0.56	1449.
30	10.38	0.0	31	-0.27	2762.1	8.29	1.27	1449.
50	8.07	0.0	51	-0.09	2743.3	13.81	3.52	1440.
75	5.23	0.0	76	0.03	2730.3	20.64	7.87	1428.
100	4.56	0.0	102	0.04	2728.1	27.46	13.95	1426.
125	4.15	0.0	127	0.04	2726.7	34.28	21.77	1424.
150	4.72	0.0	153	0.03	2726.3	41.10	31.33	1427.
175	4.70	0.0	178	0.03	2725.2	47.91	42.61	1428.
200	4.50	0.0	204	0.04	2723.9	54.72	55.63	1427.
225	4.28	0.0	229	0.04	2722.5	61.53	70.38	1426.
250	4.15	0.0	255	0.04	2721.3	68.34	86.85	1426.
300	3.98	0.0	306	0.04	2718.9	81.94	124.98	1426.
400	3.81	0.0	407	0.04	2714.4	109.10	221.89	1427.
500	3.67	0.0	509	0.04	2709.8	136.22	346.29	1428.
600	3.50	0.0	611	0.04	2705.1	163.30	498.07	1429.
800	3.18	0.0	814	0.03	2695.8	217.31	883.40	1431.
1000	2.91	0.0	1017	0.03	2686.3	271.13	1377.11	1433.
1200	2.67	0.0	1220	0.02	2676.7	324.76	1978.39	1435.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 7- 45

DATE 23/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.3

RESULTS OF STP CAST 114 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.10	32.71	0	25.17	280.3	0.0	0.0	1488.
10	10.10	32.71	10	25.17	280.7	0.28	0.01	1488.
20	10.09	32.71	20	25.17	280.7	0.56	0.06	1488.
30	10.11	32.71	30	25.17	281.3	0.84	0.13	1488.
50	7.63	32.82	50	25.64	236.7	1.38	0.35	1479.
75	4.91	32.91	75	26.06	197.3	1.90	0.68	1469.
100	4.35	32.96	99	26.15	187.9	2.38	1.11	1467.
125	4.40	33.39	124	26.49	156.3	2.82	1.60	1468.
150	4.75	33.77	149	26.75	131.8	3.18	2.10	1471.
175	4.73	33.84	174	26.81	126.6	3.50	2.64	1471.
200	4.59	33.86	199	26.84	123.8	3.81	3.24	1471.
225	4.36	33.88	223	26.88	120.1	4.12	3.89	1471.
250	4.20	33.90	248	26.91	117.4	4.41	4.61	1470.

Surface Salinity and Temperature Observations
(P-76-7)

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 7

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DAY	GMT	0700	C	WEST
76	9	10	2300	31.161b	13.4	126- 0
76	9	11	230	32.085b	14.8	126-40
76	9	11	745	32.123b	15.0	127-40
76	9	11	1120	32.228b	15.0	128-40
76	9	11	1710	32.346		129-40
76	9	11	1855	32.267	13.5	130-40
76	9	11	2330	32.349		131-40
76	9	12	230	32.310	13.5	132-40
76	9	12	620	32.245		133-40
76	9	12	930	32.263	12.1	134-40
76	9	12	1647	32.333		136-40
76	9	12	1945	32.319		137-40
76	9	12	2245	32.324		138-40
76	9	13	145	32.365		139-40
76	9	13	415	32.380		140-40
76	9	13	720	32.605		141-40
76	9	13	1405	32.705		142-40
76	9	14	305	32.678		143-40
76	9	15	0	32.672	11.6	ON STATION
76	9	16	0	32.632	11.3	ON STATION
76	9	17	0	32.674	11.4	ON STATION
76	9	18	0	32.663	11.4	ON STATION
76	9	19	0	32.670	11.5	ON STATION
76	9	20	0	32.632	11.2	ON STATION
76	9	21	0	32.659	11.1	ON STATION
76	9	22	0	32.624	11.1	ON STATION
76	9	23	0	32.637	11.1	ON STATION
76	9	24	0	32.619	11.1	ON STATION
76	9	25	0	32.642	11.2	ON STATION
76	9	26	0	32.630	11.0	ON STATION
76	9	27	0	32.632	10.9	ON STATION
76	9	28	0	32.638	10.9	ON STATION
76	9	29	0	32.615	10.6	ON STATION
76	9	30	0	32.647	11.0	ON STATION
76	10	1	0	32.616	10.8	ON STATION
76	10	2	0	32.617	10.7	ON STATION
76	10	3	0	32.630	10.3	ON STATION
76	10	4	0	32.629	11.0	ON STATION
76	10	5	0	32.645	10.9	ON STATION
76	10	6	0	32.633		ON STATION
76	10	7	0	32.649	10.4	ON STATION
76	10	8	0	32.649	10.3	ON STATION
76	10	9	0	32.642	10.4	ON STATION
76	10	10	0	32.649	10.4	ON STATION

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 7

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
76	10	11	0	32.647	10.2	ON STATION
76	10	12	0	32.642	10.5	ON STATION
76	10	13	0	32.653	10.4	ON STATION
76	10	14	0	32.663	10.4	ON STATION
76	10	15	0	32.649	10.3	ON STATION
76	10	16	0	32.652	10.3	ON STATION
76	10	17	0	32.650	10.3	ON STATION
76	10	18	0	32.634	10.3	ON STATION
76	10	19	0	32.644	10.4	ON STATION
76	10	20	0	32.622	10.4	ON STATION
76	10	21	0	32.645	10.5	ON STATION
76	10	22	0	32.629	10.3	ON STATION
76	10	23	0	32.641	9.9	ON STATION
76	10	24	0	32.632		ON STATION
76	10	25	300	32.645	9.3	142-40
76	10	25	620	32.395		141-40
76	10	25	845	32.483		140-40
76	10	25	1115	32.381		139-40
76	10	25	1400	32.399		138-40
76	10	25	1630	32.417		137-40
76	10	25	1910	32.359	11.4	136-40
76	10	25	2145	32.364		135-40
76	10	26	30	32.229	11.7	134-40
76	10	26	305	32.305		133-40
76	10	26	550	32.384	12.4	132-40
76	10	26	830	32.350		131-40
76	10	26	1115	32.329	12.5	130-40
76	10	26	1615	32.102	12.2	128-40
76	10	26	1845	32.209	12.7	127-40
76	10	26	2145	32.161	13.2	126-40
76	10	26	2335	31.974	10.4	126- 0
76	10	27	115	32.024	9.9	125-33

b DENOTES SALINITY SAMPLE TAKEN FROM A
BUCKET. ALL OTHER SAMPLES TAKEN FROM
THE SEAWATER LOOP

CA1 EP321

- 77R04

Pacific Marine Science Report 77-4

Government
Publications

**OCEANOGRAPHIC OBSERVATIONS
AT OCEAN STATION P
(50° N., 145° W.)**

Volume 77

22 October — 8 December 1976

Seakem Oceanography Ltd.



**INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Victoria, B.C.**



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OCEANOGRAPHIC OBSERVATIONS AT OCEAN STATION P (50°N, 145°W)

Volume 77

22 October - 8 December 1976

Seakem Oceanography Ltd.

Institute of Ocean Sciences, Patricia Bay
Victoria, B.C.

January 1977

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ABSTRACT

Physical, chemical and biological oceanographic observations are made from the weathership at Ocean Weather Station Papa, and between Esquimalt and Station Papa, on a routine continuing basis. Physical oceanography data only are shown, including profiles obtained with bottle casts and conductivity-temperature-pressure instruments. Surface observations are also shown.

INTRODUCTION

Canadian operation of Ocean Weather Station P (Latitude $50^{\circ}00'N$, Longitude $145^{\circ}00'W$) was inaugurated in December 1950. The station is occupied primarily to make meteorological observations of the surface and upper air and to provide an air-sea rescue service. The station is manned by two vessels operated by the Marine Services Branch of the Ministry of Transport. They are the CCGS Vancouver and the CCGS Quadra. Each ship remains on station for a period of six weeks, and is then relieved by the alternate ship, thus maintaining a continuous watch.

Bathythermograph observations have been made at Station P since July 1952. A program of more extensive oceanographic observations commenced in August 1956. This was extended in April 1959 by the addition of a series of oceanographic stations along the route to and from Station P and Swiftsure Bank. These stations are known as Line P stations. The number of stations on Line P has been increased twice and now consists of twelve stations (Fig. 1). Bathythermograph observations and surface salinity sample collections, in addition to being made on Line P oceanographic stations, are also made at odd meridians at $40'$, i.e. $139^{\circ}40'W$, $141^{\circ}40'W$, etc. These stations are known as Line P BT stations. Data observed prior to 1968 has been indexed by Collins et al (1969).

The present record includes hydrographic, continuously sampled STP and surface salinity and temperature data collected from the CCGS Vancouver during the period 22 October to 8 December 1976.

All physical oceanographic data have been stored by the Canadian Oceanographic Data Centre (CODC), 615 Booth Street, Ottawa, Ontario, Canada. Requests for these data should be directed to CODC.

Biological and productivity data are published in the Manuscript Report series of the Fisheries Research Board of Canada (FRB), Pacific Biological Station, Nanaimo, British Columbia, Canada. Requests for these data should be directed to FRB.

Marine geochemical data are for the Ocean Chemistry Group, Ocean and Aquatic Sciences, Environment Canada, 512 - 1230 Government Street, Victoria, British Columbia, Canada.

PROGRAM OF OBSERVATIONS FROM CCGS VANCOUVER, 22 October - 8 December 1976
(P-76-8) (CODC Ref. No. 15-76-008)

Oceanographic observations were made by Mr. B. Canning of Seakem Oceanography Ltd., Victoria, B.C.

En route to Station P, Stations 1 to 8 were occupied and a STP profile made to near bottom or 1500 metres. Stations 9 to 12 were cancelled due to rough weather.

Samples for nitrate, nutrient, alkalinity and total CO_2 were taken from a bucket at each whole station.

Surface salinity samples and temperatures were taken at all whole and half stations from a bucket. (The seawater loop pump was inoperational.)

10 minute tarball tows were made at Stations 2, 4 and 8.

The surface temperature recorder and PCO_2 system were run continuously. The thermosalinograph was inoperational.

Mechanical BT or XBT's were taken at all Line P and BT stations.

At Station P the oceanographic program was carried out as follows:

I. Physical Oceanography

- 1) Profiles of salinity, temperature and oxygen were obtained from 5 hydrographic casts to near bottom (4200 m).
- 2) 22 STP profiles to 1500 metres and 2 to 350 metres were obtained.
- 3) BT's or XBT's were taken every three hours to coincide with meteorological observations, encoded and transmitted according to the IGOSS format.
- 4) Salinity samples daily at 0000 hrs GMT from either a bucket or the seawater loop were taken.

II. Marine Geochemistry

- 1) Nutrient samples were collected daily at 0000 hrs GMT from either the seawater loop or a bucket, and once every hour for a 24 hour period from the seawater loop or a bucket.
- 2) Salinity samples were collected daily at 0000 hrs GMT.
- 3) Alkalinity and total CO_2 samples were taken every three days from the seawater loop or a bucket.
- 4) Air CO_2 samples were taken weekly in quadruplicate.

- 5) 5 surface tarball tows of 10 minutes duration were made.
- 6) 1 seawater C-14 sample was extracted from 45 gallons of seawater taken from the seawater loop. 1 seawater C-13 sample and 2 air C-13 samples were taken as well.
- 7) 1 rainwater tritium sample was collected from a bucket.
- 8) Hydrocasts for nutrients, alkalinity, total CO_2 and tritium were taken.
- 9) PCO_2 system in operation for the entire time on station with carboys filled with seawater about twice a week for PCO_2 analysis.

III. Biological and Productivity

Samples were obtained as follows:

- 1) 22 - 150 metre vertical plankton hauls.
2 - 1200 metre vertical plankton hauls.
3 groups of 3 horizontal surface plankton tows were taken on 3 consecutive nights at sunset.
- 2) 2 profiles for plant pigment and C-14 and 1 profile for nitrates were obtained and 4 surface samples each were taken from the seawater loop.

An emergency run was made to Quatsino Sound on October 26, arriving back on Station P on October 30. During this run, surface salinity samples were taken every three hours. The PCO_2 system and surface temperature recorder were run continuously.

On November 22, the ship began a return run to Esquimalt to effect repairs to the bow area. The S.T.D. and hydro winches were inoperative due to flooding of their motors in the bow jet compartment. An XBT was taken at all whole and half stations along with surface salinities from the bucket. Bucket samplings of nitrates, nutrients, alkalinity and total CO_2 were taken at all whole stations. The loop pump did not operate due to the roll of the vessel. The PCO_2 system and the surface temperature recorder were run continuously. Surface bucket temperatures were taken at all whole stations.

En route back to Station P, surface temperatures and salinities were taken from a bucket at all whole and half stations. An XBT was taken at all whole and half stations. Samples for nutrients, alkalinity and total CO_2 were taken from a bucket at all whole stations. The PCO_2 system and surface recorder ran continuously.

En route from Station P, a hydrocast to 1500 m was taken at Station 12. STD's were taken at Stations 12, 10, 8, 6, and 5 to 1. Salinity samples were taken at all whole and half stations. An XBT or BT was taken at all whole and half stations. Nitrate samples were taken at Stations 12, 9, 6, 4, and 2 only due to the limited number of sample flasks. Tarball tows were taken at all whole stations. The PCO_2 system and surface temperature recorder were run

continuously. Surface bucket temperatures were taken at all whole and half stations.

Observations for Other Agencies

- 1) Marine mammal observations were made by the ship's officers for Mr. I. McAskie, Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, British Columbia, Canada.
- 2) Bird observations were made by the ship's officers for Dr. M. Myres, University of Alberta, Calgary, Alberta, Canada and Mr. J. Guiguet, Curator of Birds and Mammals, Provincial Museum, Department of Recreation and Conservation, Victoria, British Columbia, Canada.
- 3) Air CO₂ samples weekly in duplicate for Scripps Institution of Oceanography, La Jolla, San Diego, California, U.S.A.

Data was processed for publication by Ms. M. Sainsbury of Seakem Oceanography Ltd., Victoria, B.C.

OBSERVATIONAL PROCEDURES

Observations for salinity, oxygen and temperature from all hydrographic casts, including the surface, were obtained with Niskin water sample bottles equipped with either Richter and Wiese and/or Yoshino Keiki Co. reversing thermometers. Two protected thermometers were used on all bottles, and one unprotected thermometer was used on each bottle at depths of 300 m or greater. The accuracy of protected reversing thermometers is believed to be $\pm 0.02^{\circ}\text{C}$.

The daily surface water temperatures were measured from a bucket sample using a deck thermometer of $\pm 0.1^{\circ}\text{C}$ accuracy. The daily surface salinity samples were obtained from the seawater loop. When the seawater loop was not operational, these samples were obtained with a bucket, and are indicated with a "b" in this data record.

Salinity determinations were made aboard ship with either an Autolab Model 601 Mark III inductive salinometer or a Hytech Model 6220 lab salinometer. Accuracy using duplicate determinations is estimated to be $\pm 0.003^{\circ}/\text{oo}$.

Depth determinations were made using the "depth difference" method described in the U.S.N. Hydrographic Office Publication No. 607 (1955). Depth estimates have an approximate accuracy of ± 5 m for depths less than 1000 m, and $\pm 5\%$ of depth for depths greater than 1000 m.

The dissolved oxygen analyses were done in the shipboard laboratory by a modified Winkler method (Carpenter, 1965).

Line P engine intake continuous temperatures were recorded by a Honeywell Elektronik 15 Recorder. The temperature probe is at a depth of approximately 3 metres below the sea surface and the instrument accuracy is believed to be $\pm 0.1^{\circ}\text{C}$.

Each ship is equipped with a Plessey Model 6600-T thermosalinograph which is used, on Line P, for continuous recording of surface temperatures and salinities from the ship's seawater loop. The temperature probe is mounted at the seawater loop intake (approximately 3 metres below the surface) and the salinity probe and recorder are situated in the dry lab. The accuracy of this instrument is believed to be ± 0.1 ‰ for salinity.

STP profiles were taken with a Guildline Model 8700 STP system.

COMPUTATIONS

All hydrographic data were processed with the aid of an IBM 370 computer. Reversing thermometer temperature corrections, thermometric depth calculations and accepted depth from the "depth difference" method were computed. Extraneous thermometric depths caused by thermometer malfunctions are automatically edited and replaced. A Calcomp 565 Offline Plotter was used to plot temperature-salinity and temperature-oxygen vs \log_{10} depth. These plots were used to check the data for errors.

Missing hydrographic data were obtained using a weighted parabolas interpolation method (Reiniger and Ross, 1968). These data are indicated with an asterisk in this data record.

Data values which we suspect but which we have included in this data record are indicated with a plus. These data have been removed from punch card and magnetic tape records.

Analog records from the salinity-temperature-pressure instrument have been machine digitized, then replotted using the Calcomp plotter.

Digitization was continued until original and computer plotted traces were coincident. Temperature and salinity values were listed at standard pressures; integrals (depths, geopotential anomaly, and potential energy anomaly) were computed from the entire array of digitized data.

The headings for the data listings are explained as follows:

PRESS	is pressure (decibars)
TEMP	is temperature (degrees Celsius)
SAL	is salinity (parts per thousand)
DEPTH	is reported in metres
SIGMA-T	is specific gravity anomaly
SVA	is specific volume anomaly
THETA	is potential temperature (degrees Celsius)
SVA (THETA)	is potential specific volume anomaly
DELTA D	is geopotential anomaly (J/kg)
POT EN	is potential energy in units of 10^8 ergs/cm ²
OXY	is the concentration of dissolved oxygen expressed in millilitres per litre
B-V PERIOD	is the Brunt-Vaisala period in minutes

REFERENCES

- Carpenter, J. H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. and Oceanogr.* 10: 141-143.
- Collins, C. A., R. L. Tripe, D. A. Healey and J. Joergensen, 1969. The time distribution of serial oceanographic data from the Ocean Station P programme. *Fish. Res. Bd Can. Tech. Rept.* No. 106.
- Reiniger, R. F. and C. K. Ross, 1968. A method of interpolation with application to oceanographic data. *Deep Sea Res.* 15: 185-193.
- U.S.N. Hydrographic Office, 1955. Instruction manual for oceanographic observations, Publ. No. 607.

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- Figure 7. Salinity difference between hydro data and STP. P-76-8.
- Figure 8. Temperature difference between hydro data and STP. P-76-8.

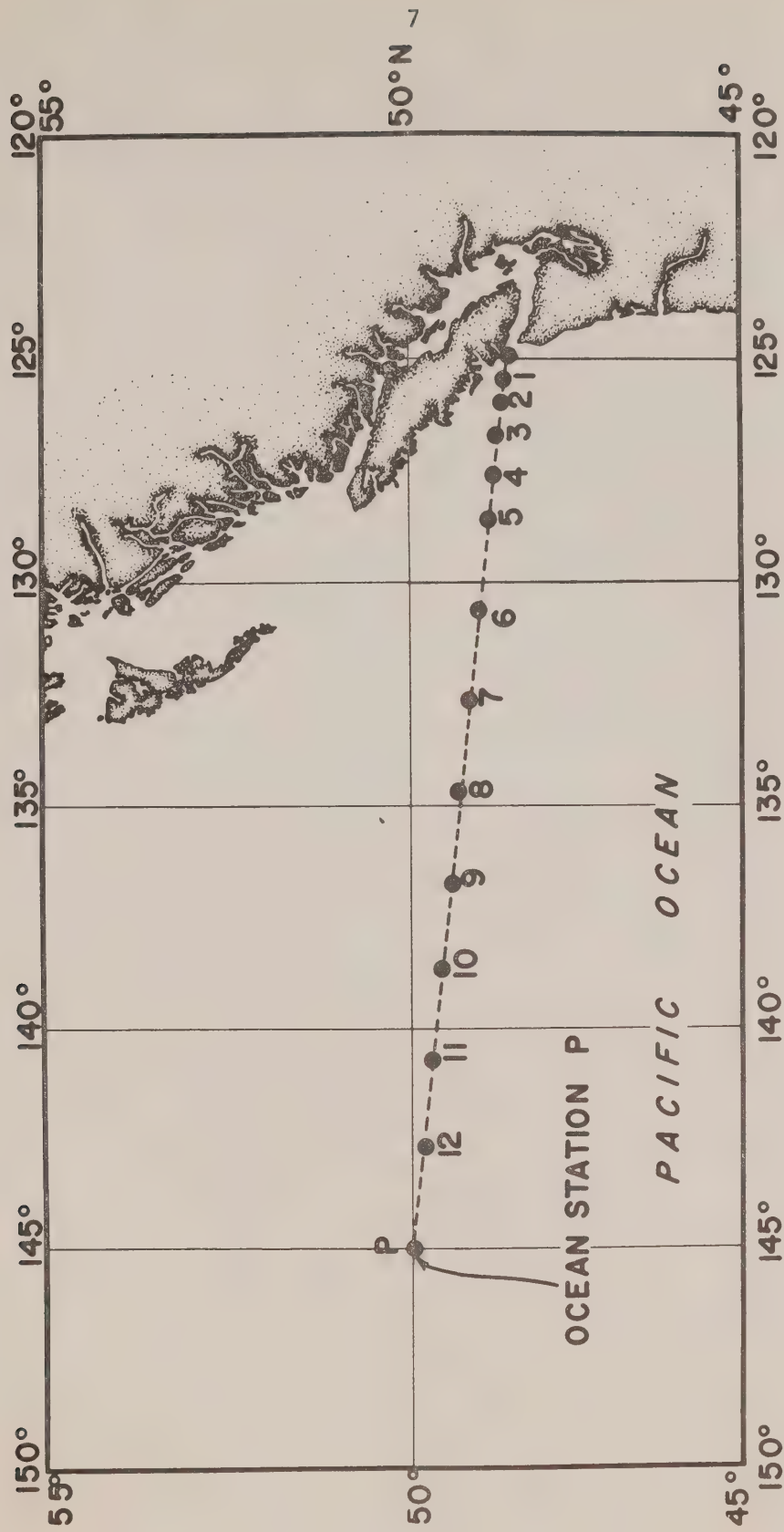


Fig. 1 Chart showing Line P station positions.

Oceanographic Data Obtained on Cruise P-76-8
(CODC Reference No. 15-76-008)

Results of Hydrographic Observations
(P-76-8)

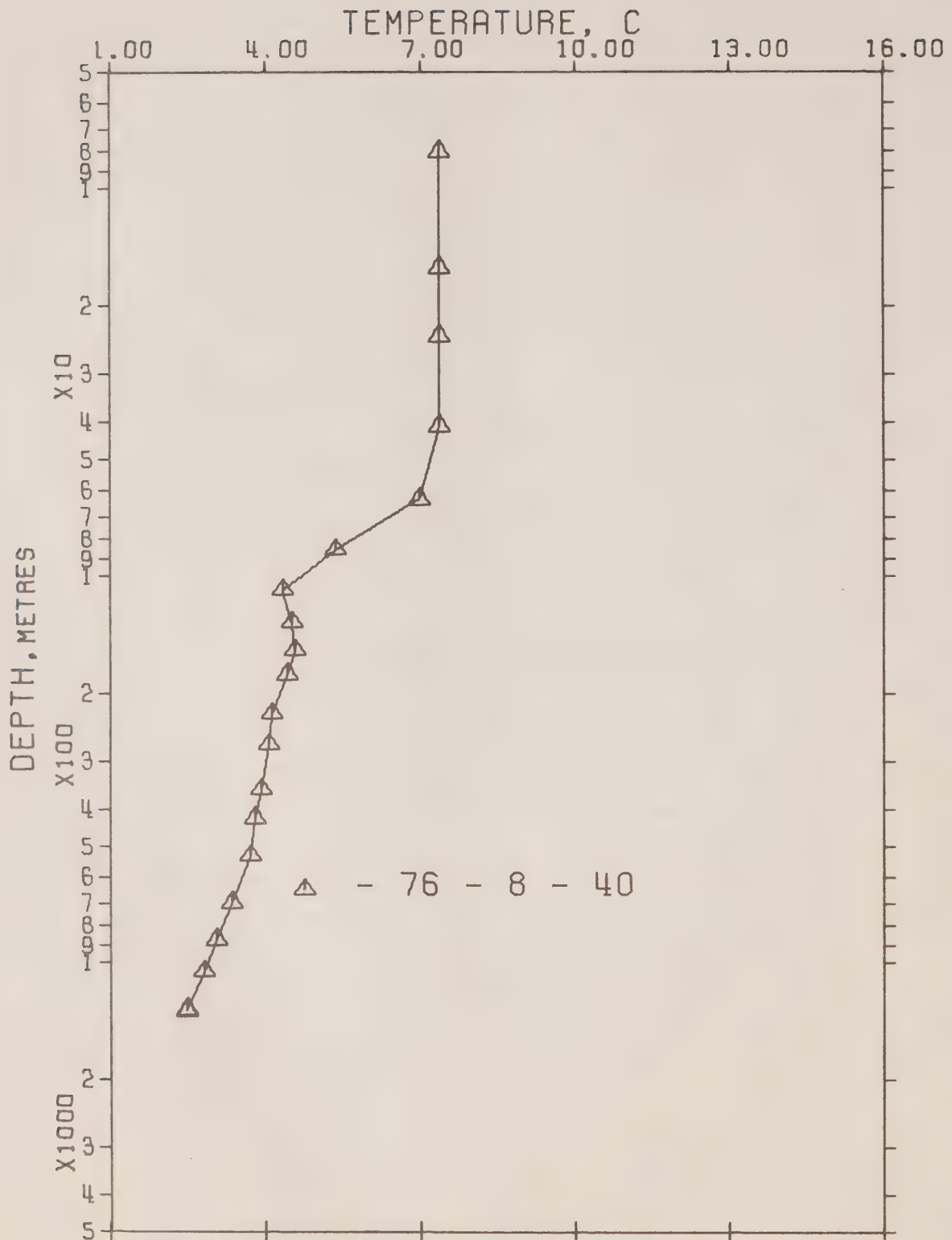


Figure 2. Composite plot of temperature vs \log_{10} depth for Line P stations. P-76-8.

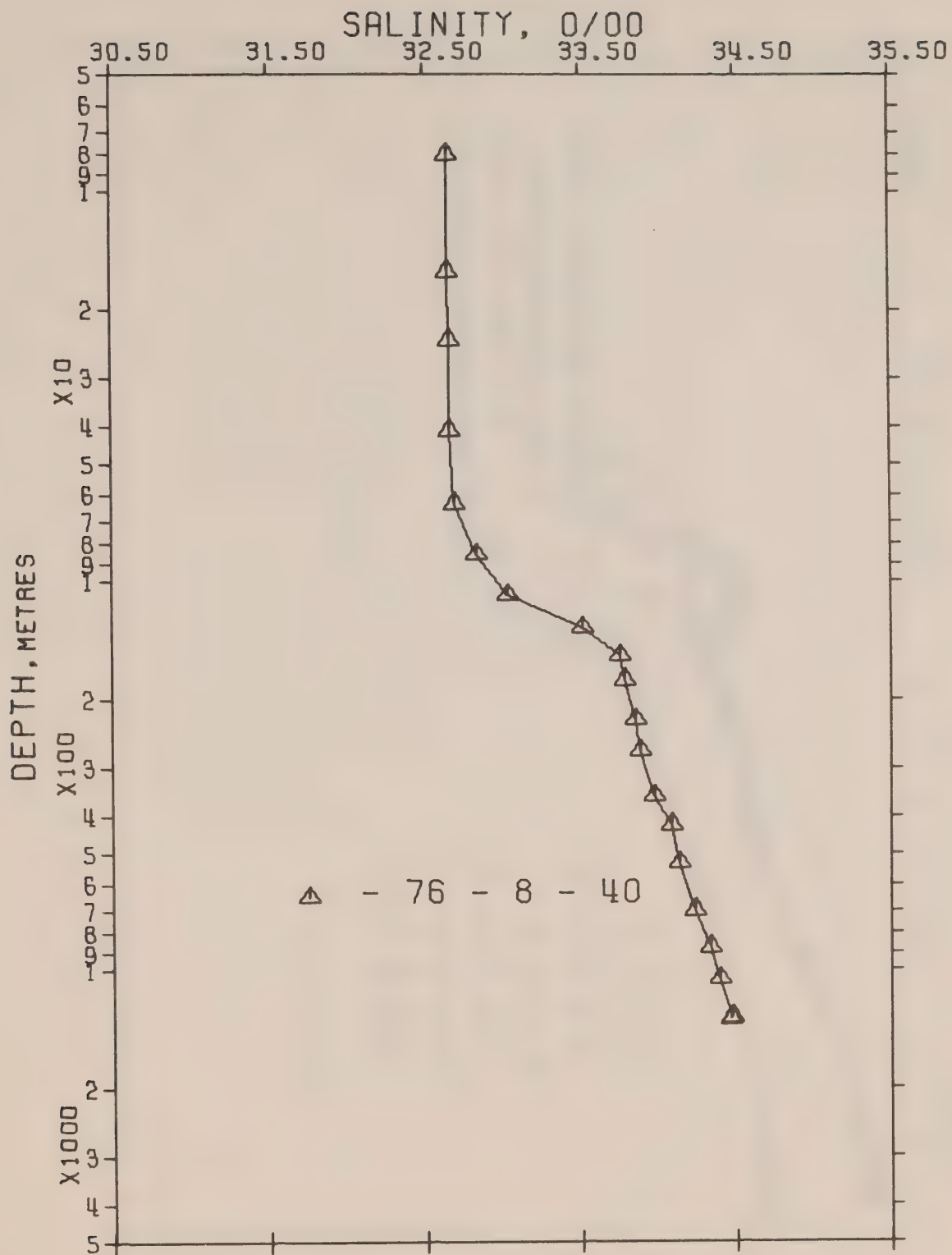


Figure 3. Composite plot of salinity vs log₁₀ depth for Line P stations. P-76-8.

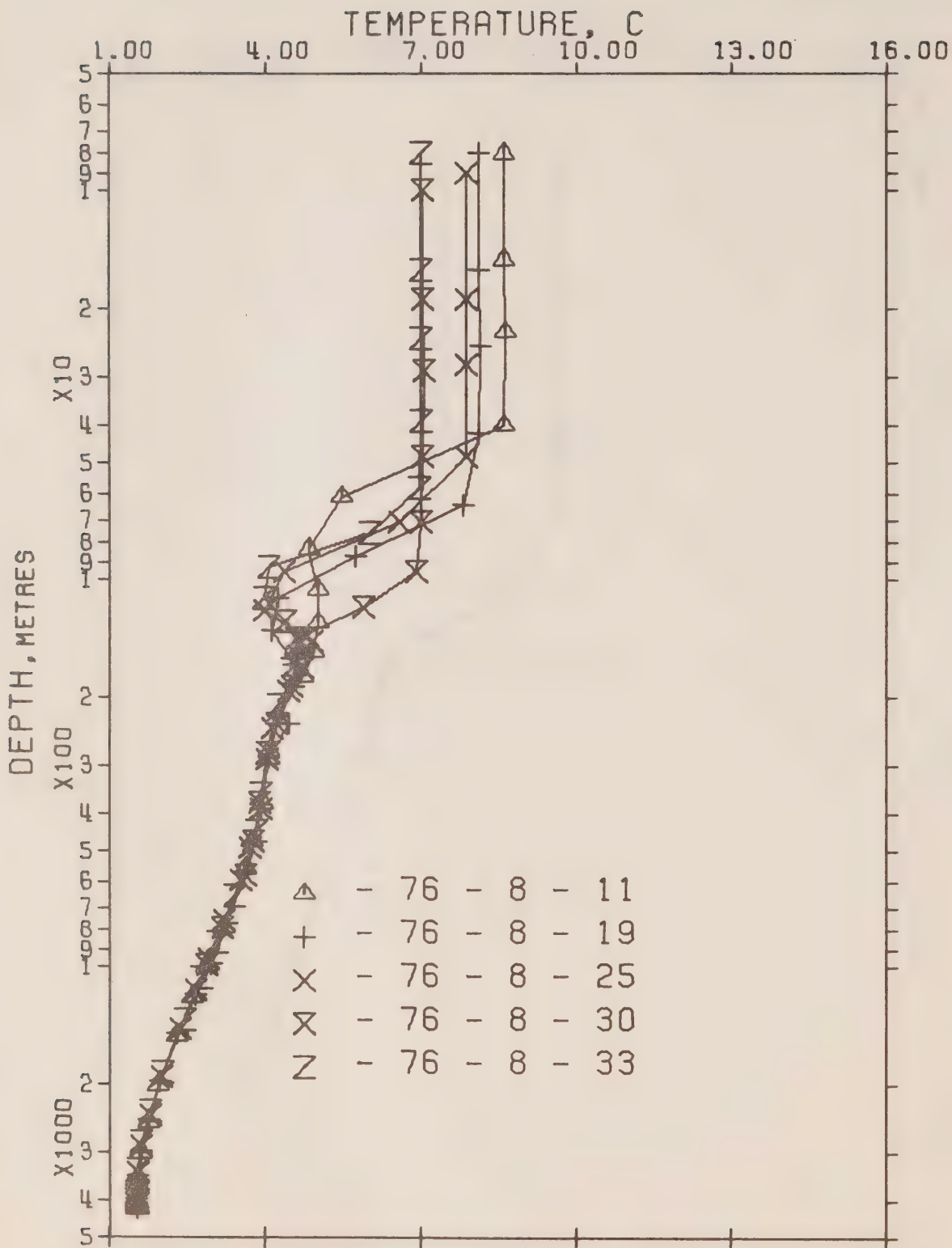


Figure 4. Composite plot of temperature vs \log_{10} depth for Station P. P-76-8.

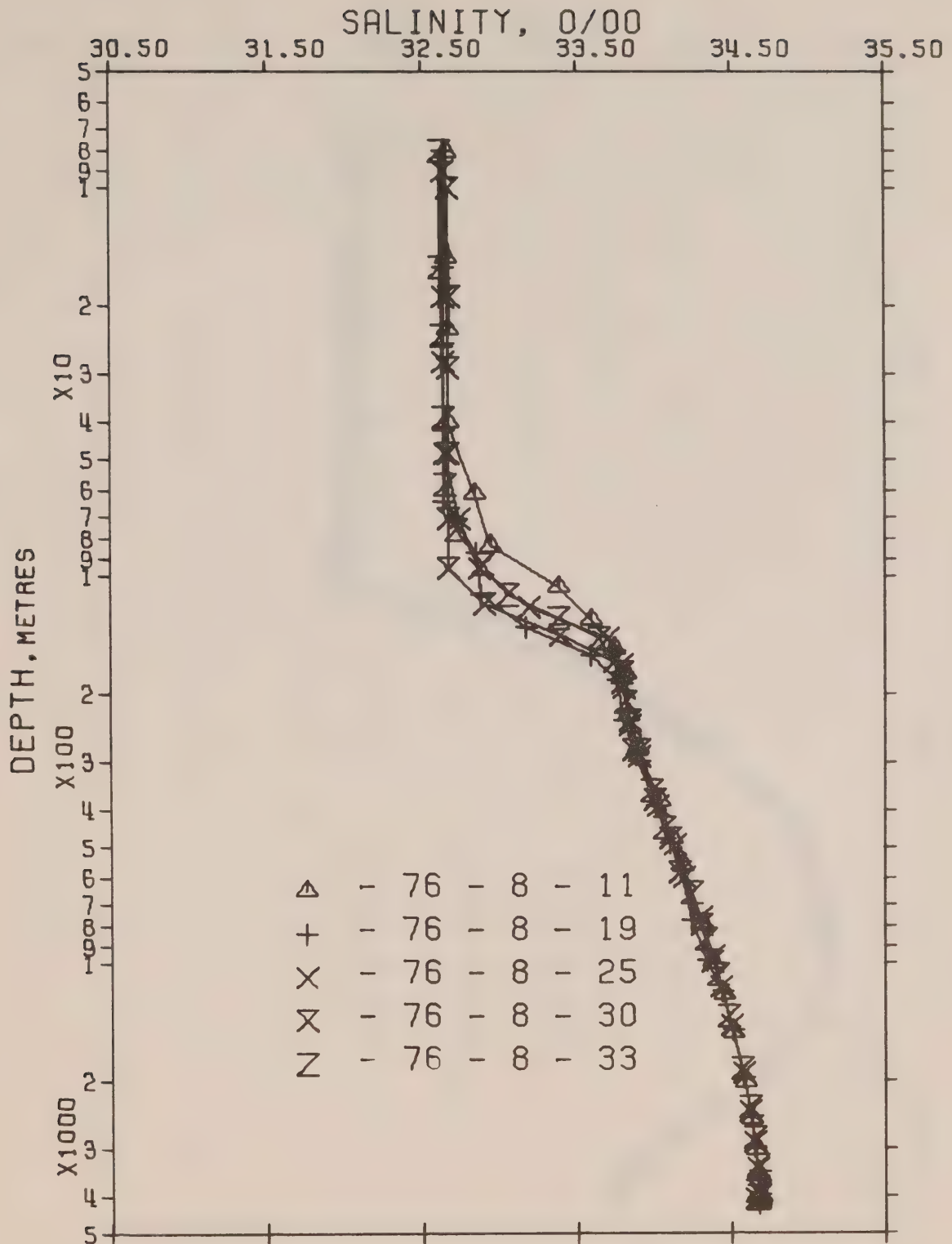


Figure 5. Composite plot of salinity vs \log_{10} depth for Station P. P-76-8.

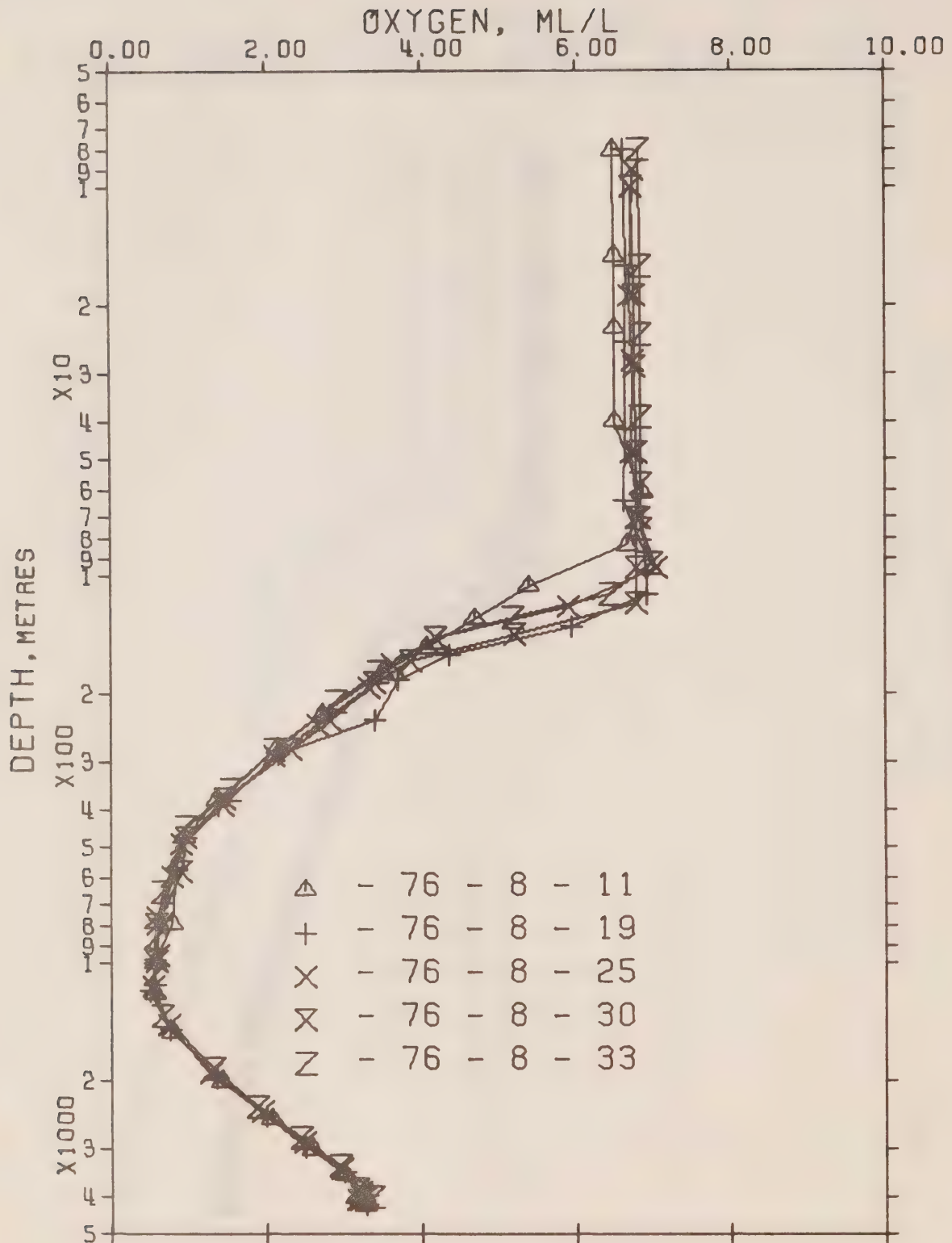
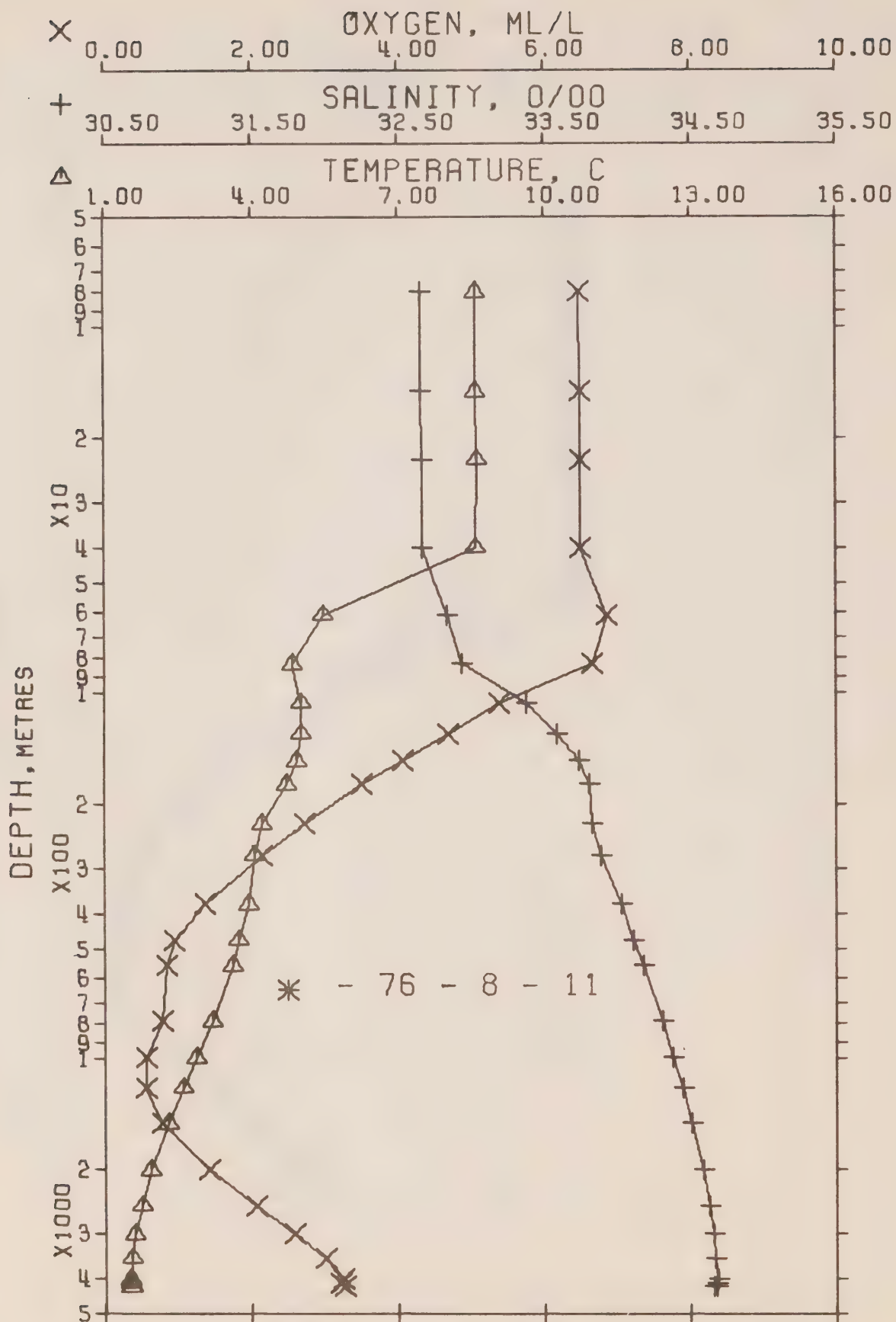


Figure 6. Composite plot of oxygen vs \log_{10} depth for Station P. P-76-8.



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DATE 31/10/76

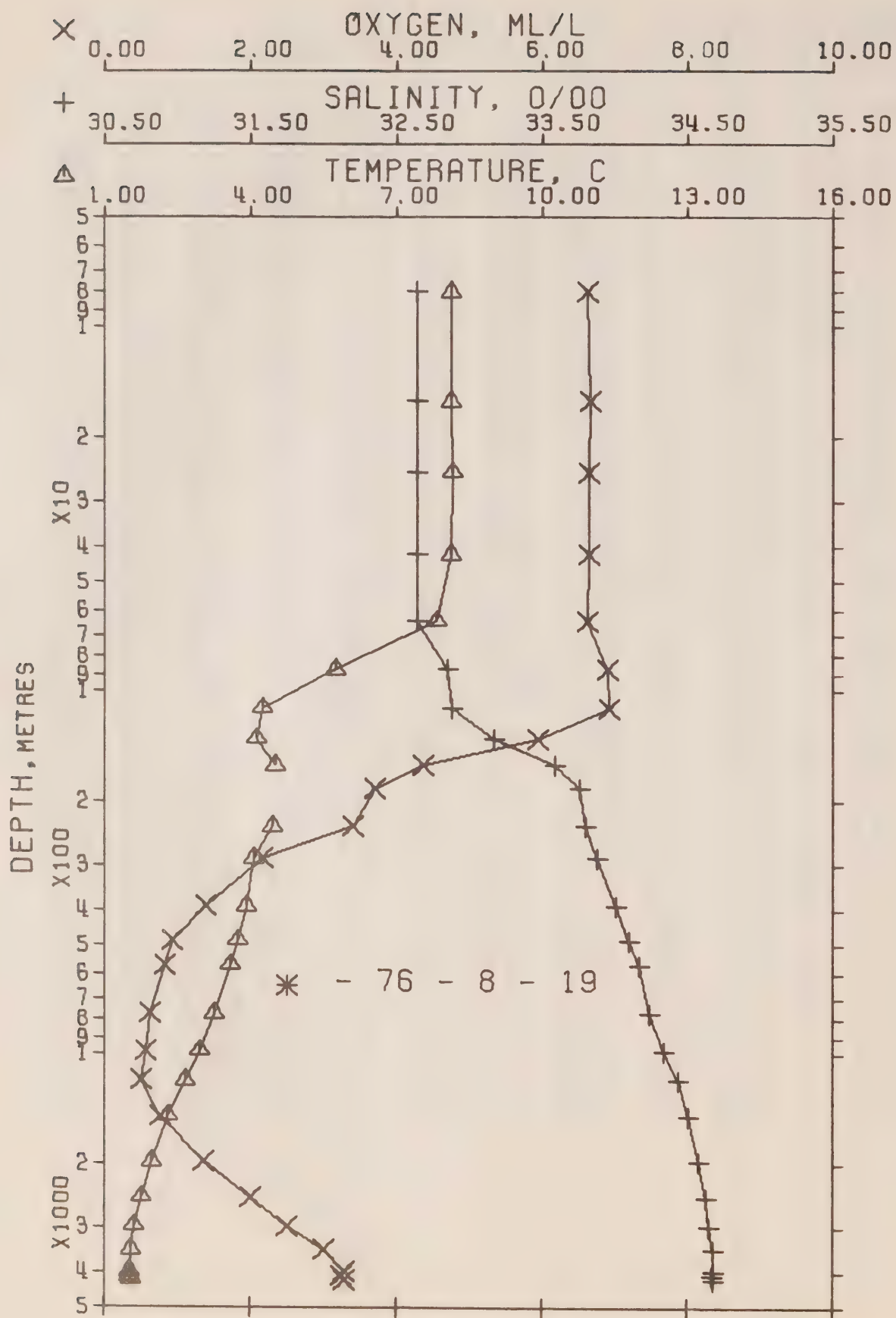
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POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.49	32.662	0	25.392	259.6	8.49	259.4	0.0	0.0	6.54	1482.
8	8.60	32.663	8	25.376	261.3	8.60	260.9	0.21	0.01	6.49	1482.
10*	8.60	32.663	10	25.376	261.3	8.60	260.9	0.26	0.01	6.49	1482.
15	8.60	32.662	15	25.375	261.5	8.60	261.0	0.39	0.03	6.50	1482.
20*	8.61	32.671	20	25.381	261.0	8.60	260.5	0.52	0.05	6.50	1483.
23	8.61	32.675	23	25.384	260.8	8.61	260.1	0.60	0.07	6.50	1483.
30*	8.61	32.671	31	25.381	261.1	8.60	260.4	0.78	0.12	6.50	1483.
40	8.60	32.666+	40	25.378	261.6	8.60	260.7	1.05	0.22	6.50	1483.
50*	6.99	32.757	51	25.679	233.0	6.99	232.0	1.30	0.33	6.69	1477.
61	5.47	32.843	61	25.939	208.3	5.47	207.4	1.54	0.47	6.86	1471.
75*	5.07	32.904	75	26.033	199.4	5.06	198.4	1.82	0.66	6.73	1470.
84	4.85	32.937	83	26.083	194.7	4.84	193.7	1.99	0.80	6.66	1469.
100*	4.98	33.260	100	26.324	172.1	4.97	170.8	2.29	1.08	5.72	1470.
107	5.03	33.376	106	26.410	163.9	5.02	162.5	2.40	1.20	5.38	1471.
125*	5.01	33.549	125	26.549	151.0	5.00	149.3	2.69	1.54	4.81	1471.
130	5.01	33.591	129	26.583	147.8	5.00	146.2	2.76	1.63	4.67	1471.
150*	4.93	33.721	149	26.694	137.5	4.92	135.6	3.05	2.04	4.15	1471.
154	4.92	33.745	153	26.715	135.6	4.91	133.7	3.11	2.13	4.05	1472.
175*	4.75	33.798	174	26.777	129.8	4.73	127.8	3.38	2.59	3.58	1471.
178	4.72	33.806	177	26.785	129.1	4.71	126.9	3.42	2.67	3.51	1471.
200*	4.48	33.819	200	26.822	125.7	4.46	123.5	3.70	3.20	3.15	1471.
225*	4.23	33.832	224	26.859	122.3	4.22	119.9	4.01	3.87	2.77	1470.
229	4.20	33.834	227	26.864	121.9	4.18	119.5	4.06	3.97	2.72	1470.
250*	4.14	33.859	249	26.890	119.6	4.12	117.0	4.31	4.60	2.46	1470.
279	4.06	33.889	277	26.922	116.7	4.04	114.0	4.66	5.53	2.14	1470.
300*	4.03	33.922	300	26.951	114.1	4.01	111.2	4.90	6.24	1.96	1470.
380	3.93	34.031	377	27.048	105.6	3.90	101.9	5.77	9.28	1.36	1471.
400*	3.89	34.050	399	27.067	103.9	3.86	100.1	5.98	10.11	1.27	1472.
476	3.74	34.113	472	27.132	98.2	3.71	93.9	6.75	13.53	0.95	1472.
500*	3.70	34.135	497	27.153	96.4	3.67	91.9	6.98	14.70	0.91	1473.
560	3.61	34.184	555	27.201	92.2	3.57	87.3	7.55	17.74	0.84	1473.
600*	3.53	34.209	601	27.229	89.8	3.49	84.6	7.91	19.91	0.83	1474.
700*	3.35	34.264	703	27.290	84.5	3.30	78.8	8.78	25.67	0.80	1475.
795	3.20	34.310	788	27.341	80.1	3.15	73.9	9.57	31.64	0.77	1476.
800*	3.19	34.312	793	27.343	80.0	3.14	73.7	9.60	31.94	0.77	1476.
900*	3.02	34.350	897	27.389	76.0	2.96	69.3	10.38	38.70	0.66	1477.
1000*	2.86	34.383	990	27.430	72.4	2.79	65.3	11.13	45.90	0.56	1478.
1002	2.86	34.384	992	27.431	72.3	2.79	65.3	11.14	46.03	0.56	1478.
1200*	2.61	34.443	1189	27.500	66.3	2.53	58.6	12.50	61.32	0.56	1480.
1209	2.60	34.446	1197	27.503	66.1	2.52	58.4	12.57	62.09	0.56	1480.
1500*	2.32	34.509	1485	27.578	59.7	2.22	51.2	14.38	87.20	0.77	1484.
1520	2.30	34.513	1503	27.582	59.4	2.20	50.8	14.50	89.01	0.78	1484.
2000*	1.94	34.589	1980	27.671	51.7	1.81	42.1	17.16	136.72	1.39	1491.
2037	1.92	34.594	2012	27.677	51.2	1.78	41.5	17.35	140.64	1.43	1491.
2500*	1.76	34.627	2471	27.716	48.4	1.58	37.6	19.64	193.50	2.00	1498.
2552	1.74	34.630	2518	27.720	48.1	1.56	37.2	19.89	200.02	2.06	1499.
3000*	1.61	34.656	2961	27.750	45.9	1.39	34.1	21.99	259.52	2.52	1506.
3066	1.59	34.659	3021	27.754	45.6	1.36	33.7	22.29	268.85	2.58	1507.
3500*	1.54	34.673	3450	27.769	45.2	1.27	32.0	24.26	334.62	2.95	1514.
3579	1.53	34.675	3522	27.772	45.1	1.25	31.7	24.61	347.41	3.01	1516.
4000*	1.51	34.685	3938	27.781	45.2	1.19	30.6	26.51	420.79	3.20	1523.
4088	1.51	34.687	4019	27.783	45.2	1.18	30.4	26.91	437.19	3.24	1524.
4100*	1.51	34.686	4031	27.782	45.4	1.18	30.5	26.96	439.43	3.24	1524.
4190	1.52	34.678	4118	27.775	46.4	1.18	31.0	27.38	456.85	3.21	1526.
4200*	1.52	34.678	4128	27.775	46.4	1.18	31.0	27.42	458.88	3.21	1526.
4280	1.54	34.681	4206	27.776	46.7	1.18	30.8	27.79	474.61	3.27	1528.
4290	1.52	34.656	4216	27.757	48.1	1.16	32.6	27.84	476.73	3.27	1528.



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REFERENCE NO. 76- 8- 19

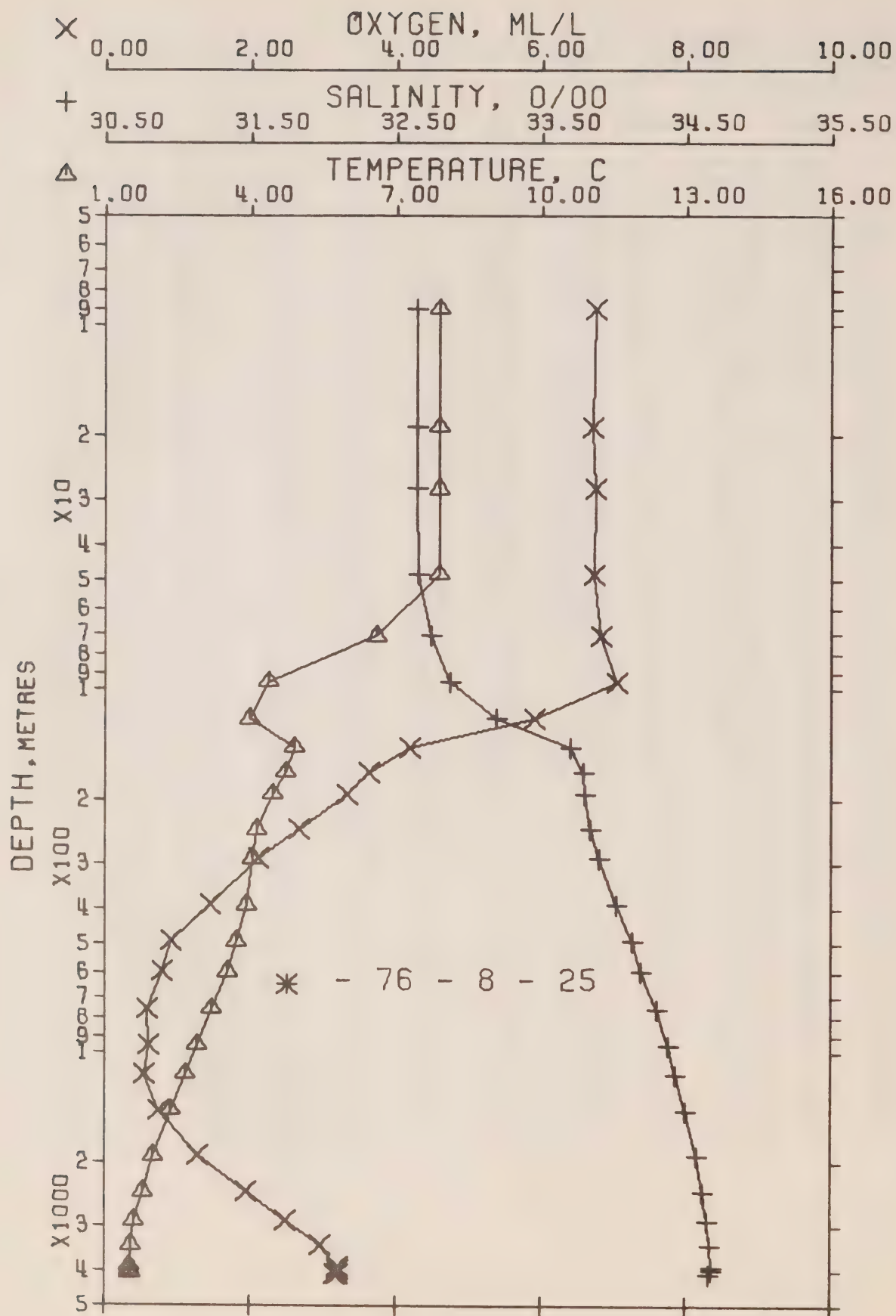
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POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	8.12	32.643	0	25.432	255.8	8.12	255.6	0.0	0.0	6.57	1480.
8	8.11	32.644	8	25.434	255.8	8.11	255.4	0.21	0.01	6.62	1480.
10*	8.11	32.644	10	25.434	255.9	8.11	255.4	0.26	0.01	6.63	1480.
16	8.12	32.644	16	25.433	256.1	8.12	255.5	0.41	0.03	6.65	1481.
20*	8.12	32.643	20	25.431	256.3	8.12	255.7	0.51	0.05	6.64	1481.
25	8.13	32.641	25	25.429	256.6	8.13	255.9	0.64	0.08	6.63	1481.
30*	8.12	32.641	31	25.430	256.6	8.12	255.8	0.77	0.12	6.63	1481.
42	8.11	32.641	42	25.432	256.5	8.11	255.6	1.08	0.23	6.64	1481.
50*	7.99	32.641	51	25.449	255.0	7.99	254.0	1.28	0.33	6.63	1481.
64	7.81	32.640	64	25.474	252.8	7.80	251.5	1.65	0.54	6.63	1480.
75*	6.79	32.744	75	25.697	231.7	6.78	230.4	1.91	0.72	6.76	1476.
88	5.75	32.850	87	25.911	211.3	5.74	210.0	2.18	0.95	6.90	1473.
100*	4.93	32.867	100	26.019	201.0	4.92	199.8	2.44	1.20	6.91	1470.
112	4.25	32.882	111	26.103	192.9	4.24	191.7	2.67	1.45	6.92	1467.
125*	4.17	33.049	125	26.244	179.6	4.16	178.3	2.92	1.75	6.36	1467.
136	4.11	33.174	135	26.349	169.7	4.10	168.3	3.11	2.00	5.94	1467.
150*	4.34	33.414	150	26.516	154.1	4.33	152.5	3.34	2.33	5.03	1469.
161	4.50	33.588	160	26.637	142.9	4.49	141.1	3.50	2.59	4.37	1470.
175*	4.49	33.684	174	26.714	135.7	4.48	133.7	3.69	2.92	3.99	1470.
186	4.49*	33.757	185	26.772	130.3	4.47	128.2	3.84	3.20	3.70	1470.
200*	4.48	33.771	200	26.784	129.3	4.46	127.1	4.02	3.55	3.62	1470.
225*	4.47	33.793	225	26.803	127.7	4.45	125.2	4.34	4.24	3.47	1471.
238	4.46	33.804	236	26.812	127.0	4.44	124.4	4.50	4.63	3.41	1471.
250*	4.36	33.823	249	26.839	124.5	4.34	121.8	4.66	5.01	3.09	1471.
290	4.06	33.881	288	26.915	117.5	4.04	114.5	5.14	6.34	2.15	1470.
300*	4.04	33.895	299	26.928	116.3	4.02	113.3	5.26	6.69	2.07	1470.
393	3.91	34.008	390	27.032	107.2	3.88	103.5	6.30	10.36	1.38	1472.
400*	3.90	34.016	398	27.039	106.5	3.87	102.7	6.37	10.66	1.35	1472.
489	3.74	34.105	485	27.126	98.9	3.71	94.5	7.28	14.79	0.91	1473.
500*	3.72	34.114	497	27.135	98.1	3.68	93.6	7.39	15.34	0.90	1473.
573	3.59	34.171	568	27.193	93.1	3.55	88.0	8.09	19.13	0.83	1473.
600*	3.54	34.182	599	27.207	91.9	3.50	86.7	8.34	20.64	0.80	1474.
700*	3.37	34.219	701	27.252	88.2	3.33	82.4	9.24	26.60	0.69	1475.
779	3.26	34.245	772	27.284	85.6	3.21	79.3	9.92	31.78	0.62	1475.
800*	3.22	34.256	795	27.295	84.5	3.17	78.2	10.10	33.21	0.61	1476.
900*	3.06	34.303	897	27.348	79.9	3.00	73.2	10.92	40.33	0.59	1477.
985	2.94	34.340	976	27.389	76.3	2.87	69.3	11.59	46.75	0.57	1478.
1000*	2.92	34.347	992	27.397	75.7	2.85	68.6	11.70	47.86	0.56	1478.
1191	2.64	34.437	1179	27.493	67.1	2.56	59.4	13.06	62.99	0.50	1480.
1200*	2.63	34.439	1189	27.495	66.8	2.55	59.1	13.12	63.72	0.51	1480.
1496	2.30	34.509	1480	27.579	59.6	2.20	51.1	14.98	89.35	0.76	1484.
1500*	2.30	34.510	1484	27.580	59.5	2.20	51.1	15.00	89.68	0.76	1484.
2000*	1.96	34.584	1976	27.666	52.3	1.82	42.7	17.81	139.96	1.36	1491.
2003	1.96	34.584	1979	27.666	52.2	1.82	42.6	17.83	140.32	1.36	1491.
2500*	1.76	34.625	2467	27.714	48.6	1.58	37.8	20.28	196.73	1.99	1498.
2509	1.76	34.626	2475	27.715	48.5	1.58	37.7	20.32	197.79	2.00	1498.
3000*	1.60	34.650	2958	27.746	46.2	1.38	34.5	22.64	262.85	2.49	1506.
3016	1.60	34.651	2972	27.747	46.2	1.38	34.4	22.71	265.09	2.50	1506.
3500*	1.53	34.675	3447	27.771	45.0	1.26	31.8	24.92	338.30	2.98	1514.
3529	1.53	34.676	3474	27.772	44.9	1.26	31.7	25.05	343.02	3.00	1515.
4000*	1.52	34.682	3936	27.778	45.5	1.20	30.8	27.16	424.23	3.26	1523.
4051	1.52	34.683	3983	27.779	45.6	1.19	30.7	27.40	433.78	3.28	1524.
4100*	1.52	34.677	4031	27.774	46.2	1.19	31.2	27.62	443.09	3.26	1524.
4157	1.52	34.670	4086	27.768	46.8	1.18	31.6	27.88	454.24	3.24	1525.
4200*	1.53	34.677	4128	27.773	46.6	1.18	31.2	28.09	462.82	3.26	1526.
4253	1.54	34.685	4180	27.779	46.3	1.19	30.6	28.33	473.52	3.27	1527.
4264	1.53	34.686*	4190	27.780	46.2	1.18	30.5	28.38	475.58	3.28	1527.



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DATE 13/11/76

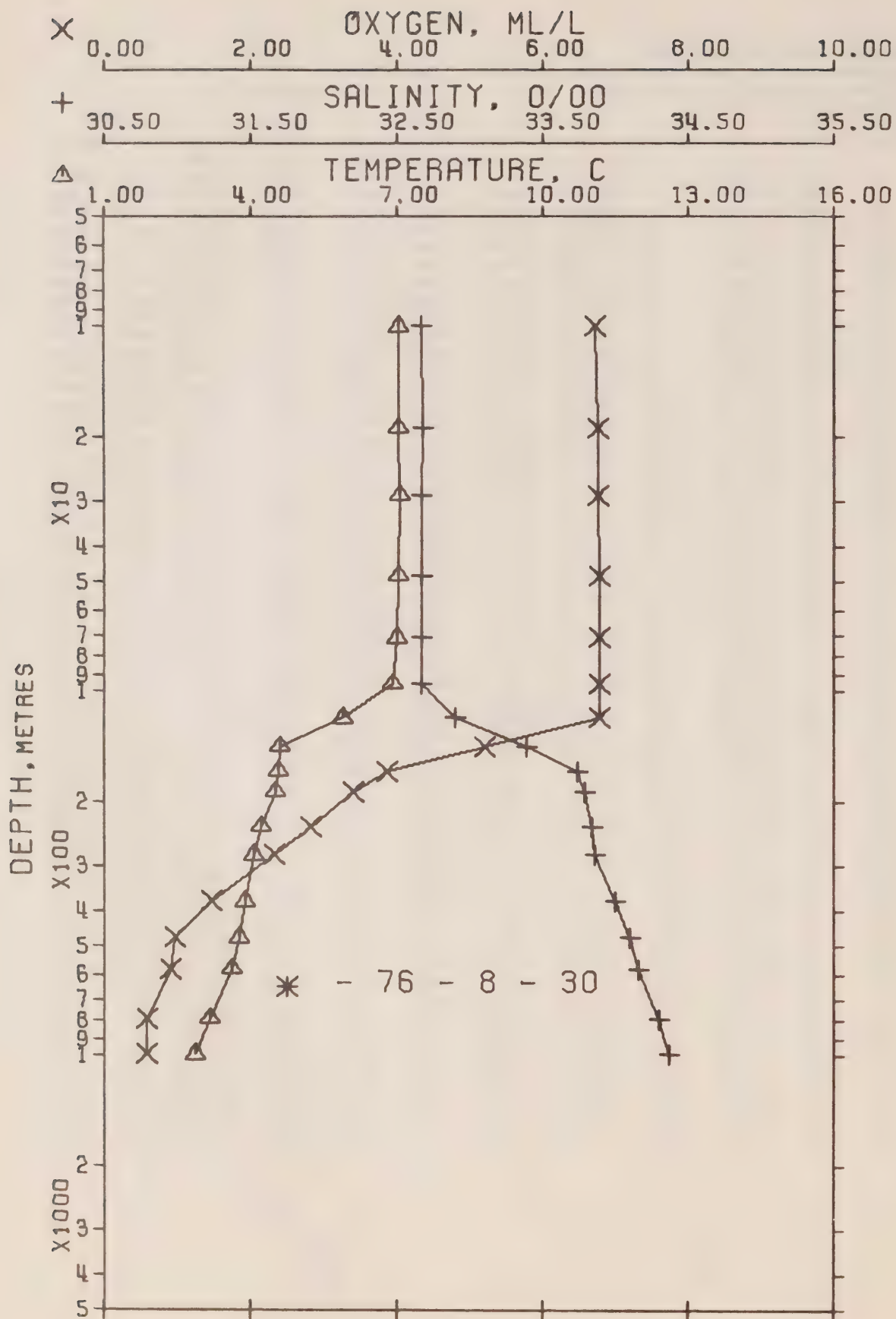
GMT 17.4

POSITION 50- 0.0 N. 145- 0.0 W

STATION F

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.87	32.645	0	25.470	252.3	7.87	252.1	0.0	0.0	6.68	1479.
9	7.86	32.644	9	25.470	252.3	7.86	252.0	0.23	0.01	6.74	1479.
10*	7.86	32.644	10	25.470	252.3	7.86	252.0	0.25	0.01	6.73	1479.
19	7.86	32.644	19	25.470	252.5	7.86	252.0	0.48	0.05	6.70	1480.
20*	7.86	32.644	20	25.470	252.5	7.86	252.0	0.50	0.05	6.71	1480.
28	7.87	32.643	28	25.468	252.8	7.87	252.2	0.71	0.10	6.74	1480.
30*	7.87	32.644	30	25.469	252.7	7.87	252.1	0.76	0.12	6.74	1480.
48	7.86	32.654	48	25.478	252.2	7.86	251.2	1.22	0.30	6.71	1480.
50*	7.75	32.661	50	25.500	250.1	7.74	249.1	1.27	0.32	6.72	1480.
71	6.59	32.738	71	25.718	229.6	6.58	228.4	1.78	0.64	6.82	1476.
75*	6.22	32.760	75	25.782	223.4	6.21	222.2	1.86	0.70	6.86	1474.
96	4.37	32.872	95	26.083	194.7	4.36	193.7	2.29	1.08	7.04	1467.
100*	4.30	32.934	100	26.140	189.3	4.29	188.3	2.38	1.16	6.82	1467.
121	3.98	33.193	120	26.377	166.9	3.97	165.7	2.75	1.58	5.90	1466.
125*	4.15	33.289	125	26.436	161.4	4.14	160.1	2.82	1.67	5.57	1467.
145	4.89	33.704	144	26.686	138.2	4.88	136.4	3.11	2.07	4.17	1471.
150*	4.85	33.722	149	26.705	136.5	4.84	134.6	3.18	2.18	4.05	1471.
169	4.71	33.786	168	26.771	130.3	4.70	128.3	3.44	2.59	3.63	1471.
175*	4.65	33.789	174	26.780	129.5	4.64	127.5	3.51	2.72	3.55	1471.
194	4.46	33.797	193	26.807	127.1	4.45	124.9	3.76	3.19	3.31	1470.
200*	4.42	33.802	199	26.815	126.2	4.40	124.1	3.83	3.33	3.23	1470.
225*	4.25	33.825	225	26.851	123.0	4.23	120.7	4.14	4.01	2.89	1470.
244	4.13	33.840	242	26.876	120.8	4.11	118.3	4.37	4.56	2.66	1470.
250*	4.12	33.848	249	26.883	120.1	4.10	117.6	4.45	4.74	2.58	1470.
293	4.04	33.899	291	26.932	115.9	4.02	113.0	4.96	6.16	2.09	1470.
300*	4.03	33.909	299	26.940	115.2	4.01	112.1	5.04	6.39	2.04	1470.
394	3.92	34.023	391	27.042	106.2	3.89	102.4	6.08	10.07	1.43	1472.
400*	3.91	34.030	398	27.049	105.6	3.88	101.8	6.14	10.33	1.40	1472.
497	3.71	34.126	493	27.145	97.1	3.67	92.6	7.12	14.80	0.89	1473.
500*	3.70	34.128	496	27.147	96.9	3.67	92.4	7.14	14.94	0.89	1473.
600*	3.53	34.185	595	27.210	91.6	3.49	86.4	8.09	20.25	0.77	1474.
601	3.53	34.186	596	27.211	91.5	3.49	86.4	8.10	20.31	0.77	1474.
700*	3.32	34.257	698	27.287	84.8	3.27	79.1	8.97	26.08	0.65	1474.
762	3.20	34.296	755	27.330	81.0	3.15	75.0	9.48	29.89	0.59	1475.
800*	3.13	34.315	796	27.351	79.1	3.08	73.0	9.79	32.32	0.59	1475.
900*	2.97	34.360	896	27.402	74.6	2.91	68.1	10.56	38.98	0.60	1476.
958	2.88	34.384	949	27.429	72.3	2.82	65.5	10.98	43.02	0.61	1477.
1000*	2.83	34.396	993	27.443	71.1	2.76	64.2	11.28	46.01	0.59	1477.
1155	2.66	34.435	1143	27.489	67.3	2.58	59.7	12.35	57.76	0.54	1479.
1200*	2.61	34.446	1192	27.503	66.1	2.53	58.5	12.65	61.38	0.57	1480.
1452	2.35	34.501	1436	27.568	60.5	2.25	52.1	14.24	82.86	0.73	1483.
1500*	2.31	34.510	1490	27.579	59.6	2.21	51.1	14.53	87.22	0.79	1484.
1950	1.99	34.581	1926	27.661	52.6	1.86	43.1	17.03	131.06	1.29	1490.
2000*	1.97	34.586	1981	27.667	52.2	1.83	42.5	17.29	136.39	1.36	1491.
2448	1.78	34.622	2416	27.710	48.9	1.61	38.1	19.56	187.71	1.93	1497.
2500*	1.76	34.625	2471	27.715	48.6	1.58	37.8	19.81	194.05	2.00	1498.
2949	1.60	34.651	2907	27.747	46.0	1.38	34.4	21.92	252.76	2.48	1505.
3000*	1.59	34.654	2960	27.750	45.9	1.37	34.2	22.16	259.80	2.53	1506.
3451	1.53	34.675	3397	27.772	44.7	1.26	31.8	24.19	326.72	2.95	1513.
3500*	1.53	34.676	3448	27.772	44.8	1.26	31.7	24.41	334.56	2.98	1514.
3952	1.52	34.680	3886	27.776	45.6	1.20	31.0	26.45	411.79	3.19	1522.
4000*	1.52	34.679	3933	27.775	45.7	1.19	31.1	26.67	420.74	3.20	1523.
4051	1.51	34.677	3983	27.775	45.9	1.18	31.1	26.90	430.36	3.20	1524.
4100*	1.53	34.670	4031	27.768	46.7	1.19	31.7	27.13	439.73	3.21	1524.
4142	1.54	34.665	4071	27.763	47.4	1.20	32.2	27.32	447.95	3.21	1525.
4152	1.51	34.659	4081	27.760	47.4	1.17	32.5	27.37	450.01	3.15	1525.



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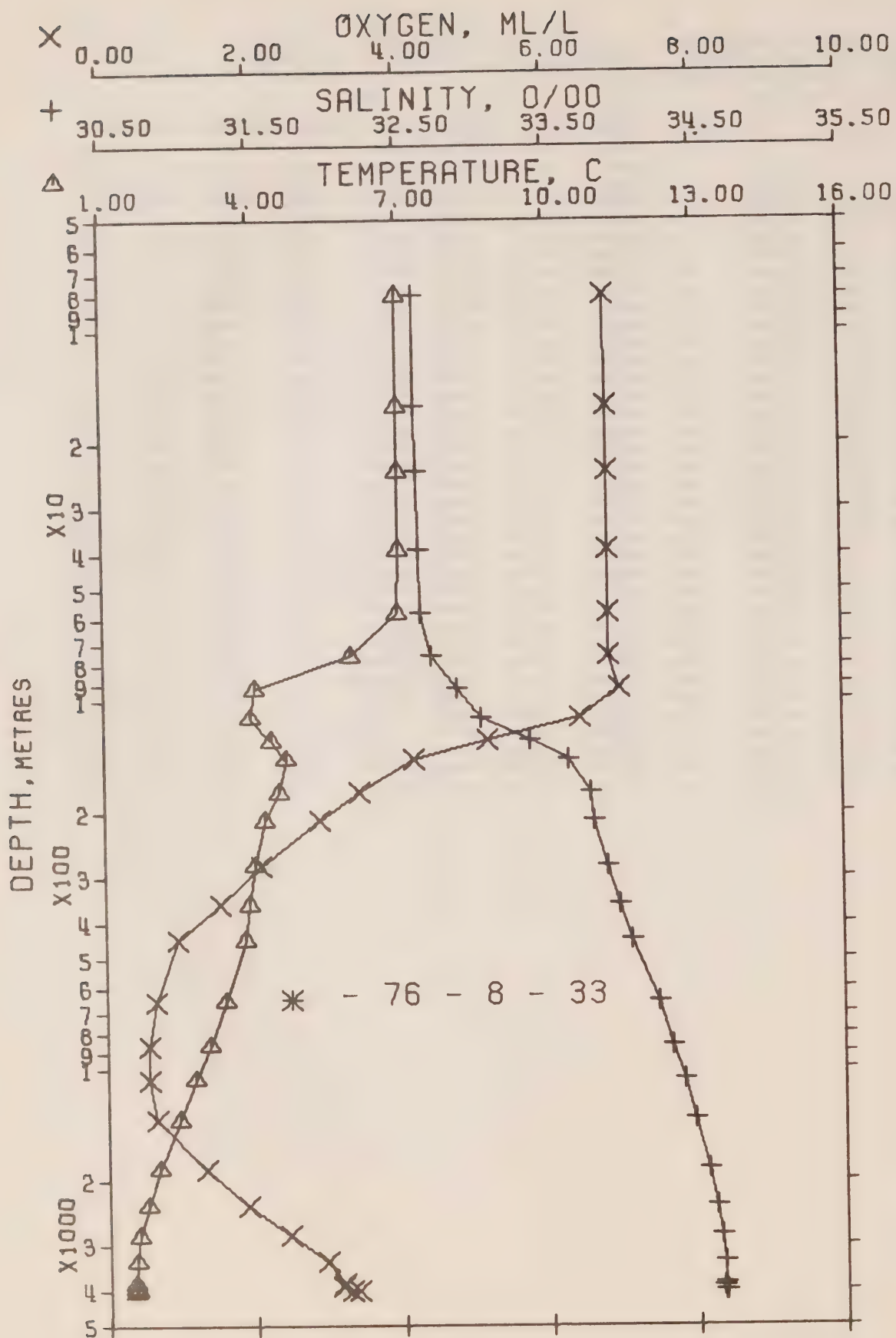
DATE 19/11/76 GMT 17.3

POSITION 50- 0.0 N, 145- 0.0 W

STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	DOY	SOUND
0	7.07	32.672	0	25.602	239.7	7.07	239.5	0.0	0.0	6.71	1476.
10	7.02	32.675	10	25.611	238.9	7.02	238.5	0.24	0.01	6.73	1476.
19	7.03	32.676	19	25.611	239.1	7.03	238.5	0.46	0.04	6.76	1476.
20*	7.03	32.676	20	25.610	239.1	7.03	238.6	0.48	0.05	6.76	1476.
29	7.05	32.673	29	25.606	239.7	7.05	239.1	0.70	0.10	6.76	1477.
30*	7.05	32.673	30	25.606	239.7	7.05	239.1	0.72	0.11	6.76	1477.
48	7.04	32.672	48	25.606	239.9	7.04	239.0	1.16	0.28	6.78	1477.
50*	7.04	32.672	50	25.607	239.9	7.03	238.9	1.20	0.31	6.78	1477.
71	6.99	32.675	71	25.615	239.3	6.98	238.1	1.71	0.62	6.79	1477.
75*	6.98	32.675	75	25.617	239.2	6.97	237.9	1.80	0.69	6.79	1477.
96	6.92	32.674	95	25.624	238.8	6.91	237.3	2.30	1.12	6.79	1477.
100*	6.71	32.722	100	25.689	232.6	6.70	231.0	2.40	1.22	6.79	1477.
119	5.90	32.905	118	25.936	209.3	5.89	207.6	2.82	1.89	6.78	1474.
125*	5.53	33.044	125	26.090	194.6	5.52	193.0	2.94	1.85	6.33	1473.
142	4.61	33.389	141	26.467	158.8	4.60	157.1	3.24	2.25	5.20	1470.
150*	4.60	33.511	149	26.565	149.6	4.59	147.9	3.36	2.43	4.73	1470.
166	4.58	33.736	165	26.745	132.7	4.57	130.8	3.59	2.80	3.85	1470.
175*	4.56	33.758	174	26.765	130.8	4.54	128.9	3.70	3.00	3.67	1470.
189	4.52	33.791	188	26.795	128.1	4.51	126.0	3.89	3.34	3.39	1470.
200*	4.44	33.803	200	26.813	126.5	4.43	124.4	4.03	3.61	3.25	1470.
225*	4.28	33.827	224	26.849	123.2	4.27	120.8	4.34	4.29	2.94	1470.
236	4.22	33.837	234	26.864	122.0	4.20	119.5	4.47	4.60	2.81	1470.
250*	4.17	33.846	249	26.876	120.9	4.15	118.3	4.64	5.03	2.66	1470.
283	4.06	33.864	281	26.902	118.6	4.04	115.9	5.04	6.11	2.33	1470.
300*	4.03	33.892	300	26.928	116.3	4.00	113.4	5.24	6.70	2.16	1470.
379	3.89	34.005	376	27.031	107.1	3.86	103.5	6.12	9.74	1.47	1471.
400*	3.86	34.026	399	27.051	105.3	3.83	101.6	6.34	10.62	1.35	1471.
478	3.77	34.097	474	27.116	99.8	3.74	95.3	7.14	14.19	0.96	1472.
500*	3.73	34.111	498	27.131	98.5	3.70	94.0	7.36	15.28	0.94	1473.
582	3.60	34.157	577	27.181	94.3	3.56	89.2	8.15	19.64	0.89	1474.
600*	3.56	34.170	598	27.196	93.0	3.52	87.7	8.32	20.66	0.86	1474.
700*	3.35	34.239	702	27.270	86.4	3.30	80.7	9.21	26.60	0.71	1475.
797	3.17	34.296	790	27.333	80.9	3.12	74.7	10.02	32.78	0.58	1475.
800*	3.17	34.297	793	27.334	80.8	3.11	74.5	10.04	32.96	0.58	1475.
900*	3.01	34.338	897	27.381	76.8	2.95	70.1	10.83	39.79	0.59	1476.
1000	2.87	34.374	990	27.422	73.1	2.80	66.1	11.58	47.02	0.59	1476.



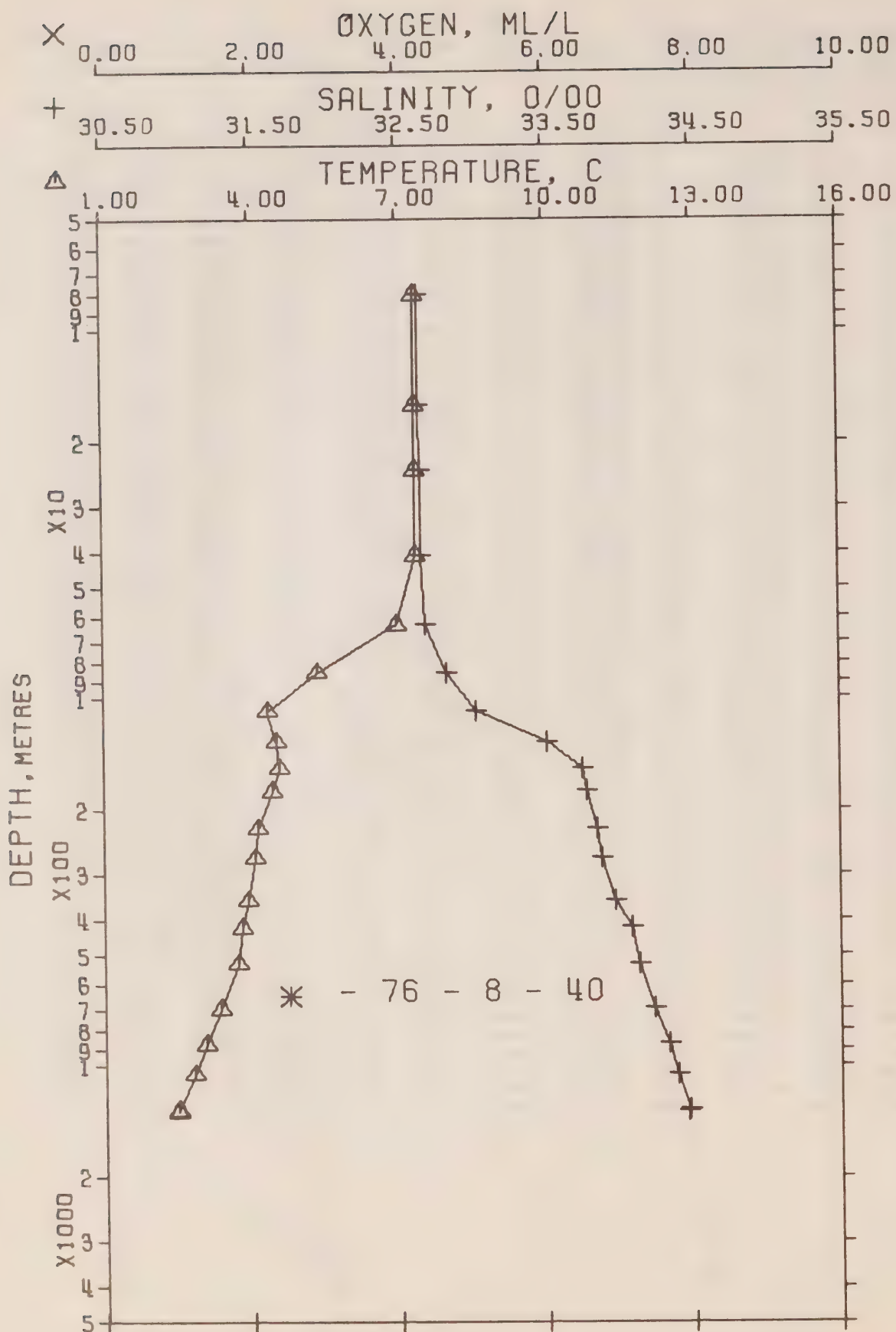
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REFERENCE NO. 76- 8- 33 DATE 30/11/76 GMT 19.0

POSITION 50- 0.0 N, 145- 0.0 W STATION P

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.00	32.618	0	25.569	242.8	7.00	242.5	0.0	0.0	6.88	1476.
8	6.99	32.620	8	25.572	242.6	6.99	242.3	0.20	0.01	6.82	1476.
10*	6.99	32.621	10	25.572	242.6	6.99	242.3	0.24	0.01	6.83	1476.
16	7.00	32.623	16	25.573	242.6	7.00	242.2	0.39	0.03	6.84	1476.
20*	7.01	32.629	20	25.577	242.3	7.00	241.8	0.49	0.05	6.84	1476.
24	7.01	32.634	24	25.580	242.0	7.01	241.5	0.59	0.07	6.84	1476.
30*	7.01	32.639	31	25.585	241.7	7.00	241.0	0.73	0.11	6.84	1476.
39	7.00	32.645	39	25.590	241.3	7.00	240.5	0.95	0.19	6.84	1477.
50*	6.99	32.646	51	25.593	241.2	6.98	240.3	1.21	0.31	6.84	1477.
58	6.98	32.647	58	25.595	241.2	6.97	240.1	1.41	0.42	6.84	1477.
75*	6.07	32.712	75	25.763	225.2	6.06	224.0	1.80	0.68	6.85	1474.
76	6.00	32.717	76	25.776	224.0	5.99	222.9	1.83	0.71	6.85	1473.
94	4.06	32.886	93	26.126	190.6	4.05	189.6	2.19	1.02	6.98	1466.
100*	4.03	32.948	100	26.178	185.7	4.02	184.6	2.31	1.14	6.77	1466.
112	3.97	33.051	111	26.266	177.4	3.96	176.3	2.52	1.37	6.43	1466.
125*	4.29	33.309	124	26.438	161.4	4.28	160.0	2.75	1.64	5.45	1468.
129	4.38	33.379	128	26.484	157.0	4.37	155.6	2.81	1.72	5.19	1468.
145	4.69	33.643	144	26.660	140.6	4.68	138.9	3.05	2.05	4.17	1470.
150*	4.67	33.668	149	26.682	138.6	4.66	136.8	3.12	2.15	4.05	1470.
175*	4.56	33.779	174	26.781	129.3	4.55	127.3	3.45	2.71	3.51	1470.
178	4.55	33.792	177	26.793	128.3	4.54	126.2	3.49	2.78	3.45	1470.
200*	4.35	33.806	199	26.825	125.3	4.34	123.2	3.77	3.31	3.09	1470.
213	4.25	33.813	211	26.842	123.8	4.23	121.6	3.93	3.64	2.90	1470.
225*	4.21	33.831	225	26.861	122.1	4.19	119.7	4.08	3.98	2.74	1470.
250*	4.12	33.865	250	26.896	119.0	4.10	118.4	4.38	4.71	2.44	1470.
281	4.03	33.903	279	26.936	115.4	4.01	112.6	4.74	5.70	2.10	1470.
300*	4.00	33.923	300	26.955	113.7	3.98	110.8	4.96	6.34	1.95	1470.
359	3.92	33.978	356	27.007	109.3	3.89	105.8	5.62	8.54	1.54	1471.
400*	3.87	34.020	399	27.045	105.9	3.84	102.1	6.06	10.25	1.26	1472.
448	3.81	34.063	444	27.085	102.4	3.78	98.3	6.56	12.40	0.97	1472.
500*	3.69	34.113	504	27.137	97.9	3.66	93.4	7.08	14.93	0.88	1473.
600*	3.50	34.196	602	27.221	90.5	3.46	85.3	8.02	20.20	0.74	1473.
659	3.40	34.238	653	27.265	86.7	3.35	81.2	8.54	23.54	0.66	1474.
700*	3.32	34.259	699	27.289	84.6	3.28	78.9	8.89	25.98	0.64	1474.
800*	3.16	34.306	799	27.341	80.1	3.10	73.9	9.72	32.27	0.59	1475.
867	3.06	34.334	859	27.373	77.4	3.00	70.8	10.24	36.76	0.55	1476.
900*	3.01	34.348	895	27.388	76.0	2.95	69.4	10.50	39.03	0.56	1477.
1000*	2.87	34.386	995	27.432	72.2	2.80	65.2	11.24	46.21	0.56	1478.
1074	2.77	34.412	1063	27.461	69.7	2.70	62.4	11.76	51.73	0.56	1478.
1200*	2.62	34.443	1197	27.499	66.4	2.54	58.7	12.62	61.08	0.60	1480.
1380	2.43	34.482	1365	27.546	62.4	2.34	54.2	13.78	76.89	0.66	1482.
1500*	2.32	34.506	1498	27.575	60.0	2.22	51.5	14.51	87.69	0.84	1484.
1881	2.02	34.570	1859	27.650	53.5	1.89	44.2	16.66	124.72	1.31	1489.
2000*	1.96	34.582	1986	27.665	52.4	1.82	42.7	17.29	137.13	1.46	1491.
2377	1.79	34.616	2346	27.705	49.2	1.62	38.8	19.20	179.81	1.88	1496.
2500*	1.74	34.625	2475	27.716	48.3	1.56	37.6	19.80	194.70	2.03	1498.
2873	1.59	34.649	2832	27.746	45.7	1.38	34.6	21.54	242.44	2.45	1504.
3000*	1.58	34.654	2964	27.751	45.6	1.36	34.1	22.12	259.81	2.58	1506.
3373	1.54	34.667	3321	27.764	45.2	1.28	32.5	23.81	314.61	2.94	1512.
3500*	1.53	34.667	3452	27.765	45.5	1.26	32.4	24.39	334.81	3.00	1514.
3881	1.51	34.668	3817	27.767	46.0	1.20	31.9	26.12	400.01	3.15	1521.
3983	1.51	34.660*	3917	27.761	46.9	1.19	32.5	26.60	419.17	3.14	1522.
4000*	1.51	34.663	3933	27.763	46.8	1.19	32.3	26.68	422.32	3.17	1523.
4077	1.53	34.677	4008	27.773	46.2	1.20	31.3	27.04	437.02	3.27	1524.
4087	1.52	34.675	4018	27.772	46.3	1.19	31.4	27.08	439.00	3.36	1524.



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REFERENCE NO. 76- 8- 40

DATE 6/12/76

GMT 5.5

POSITION 49-49.0 N, 142-40.0 W

STATION 12

HYDROGRAPHIC CAST DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.40	32.656	0	25.545	245.1	7.40	244.9	0.0	0.0		1478.
8	7.36	32.654	8	25.549	244.9	7.36	244.5	0.20	0.01		1478.
10*	7.36	32.654	10	25.548	244.9	7.36	244.5	0.24	0.01		1478.
16	7.37	32.654	16	25.547	245.1	7.37	244.6	0.39	0.03		1478.
20*	7.37	32.657	20	25.549	244.9	7.37	244.4	0.49	0.05		1478.
24	7.37	32.659	24	25.551	244.8	7.37	244.3	0.59	0.07		1478.
30*	7.37	32.660	31	25.553	244.6	7.36	244.1	0.73	0.11		1478.
41	7.36	32.662	41	25.555	244.7	7.36	243.9	1.01	0.21		1478.
50*	7.19	32.676	51	25.589	241.5	7.19	240.6	1.22	0.31		1478.
63	6.98	32.694	63	25.632	237.7	6.97	236.6	1.55	0.50		1477.
75*	6.07	32.770	75	25.809	220.8	6.06	219.7	1.81	0.69		1474.
86	5.35	32.830	85	25.942	208.2	5.34	207.0	2.04	0.87		1471.
100*	4.68	32.961	100	26.121	191.2	4.67	190.1	2.33	1.14		1469.
109	4.32	33.031	108	26.214	182.4	4.31	181.2	2.49	1.32		1467.
125*	4.46	33.379	125	26.475	157.8	4.45	156.4	2.77	1.65		1469.
132	4.51	33.512	131	26.575	148.4	4.50	146.9	2.87	1.78		1469.
150*	4.55	33.692	149	26.714	135.5	4.54	133.7	3.13	2.15		1470.
156	4.56	33.748	155	26.757	131.5	4.55	129.6	3.21	2.28		1470.
175*	4.45	33.772	174	26.788	128.6	4.44	126.7	3.45	2.69		1470.
180	4.42	33.778	179	26.796	128.0	4.41	125.9	3.52	2.81		1470.
200*	4.28	33.811	200	26.837	124.2	4.27	122.1	3.77	3.30		1470.
225*	4.13	33.848	224	26.883	120.0	4.11	117.7	4.07	3.96		1470.
228	4.11	33.852	226	26.887	119.6	4.09	117.2	4.11	4.03		1469.
250*	4.08	33.867	249	26.901	118.4	4.07	115.9	4.37	4.68		1470.
274	4.06	33.881	272	26.915	117.3	4.04	114.6	4.65	5.43		1470.
300*	4.01	33.913	300	26.946	114.6	3.99	111.6	4.96	6.31		1470.
358	3.91	33.975	355	27.005	109.4	3.88	106.0	5.60	8.49		1471.
400*	3.84	34.041	398	27.065	104.1	3.81	100.3	6.05	10.23		1471.
424	3.80	34.076	421	27.097	101.3	3.77	97.2	6.30	11.28		1472.
500*	3.72	34.116	498	27.137	97.9	3.68	93.4	7.05	14.81		1473.
530	3.69	34.131	526	27.151	96.8	3.65	92.0	7.35	16.36		1473.
600*	3.53	34.174	601	27.201	92.4	3.49	87.3	8.01	20.16		1474.
700*	3.34	34.228	694	27.263	87.0	3.29	81.3	8.90	26.10		1474.
703	3.33	34.230	697	27.265	86.9	3.28	81.1	8.93	26.30		1474.
800*	3.17	34.285	797	27.324	81.7	3.11	75.5	9.75	32.55		1475.
879	3.05	34.326	871	27.368	78.0	2.99	71.4	10.38	37.96		1476.
900*	3.02	34.335	893	27.377	77.0	2.96	70.4	10.54	39.42		1477.
1000*	2.87	34.373	994	27.421	73.2	2.80	66.2	11.29	46.68		1478.
1061	2.79	34.395	1051	27.446	71.1	2.72	63.9	11.74	51.34		1478.
1200*	2.62	34.434	1195	27.491	67.2	2.54	59.5	12.69	62.37		1480.
1335	2.48	34.467	1321	27.530	63.9	2.39	55.8	13.57	73.69		1482.
1344	2.46	34.462	1330	27.528	64.0	2.37	55.9	13.63	74.48		1482.

Results of STP Observations
(P-76-8)

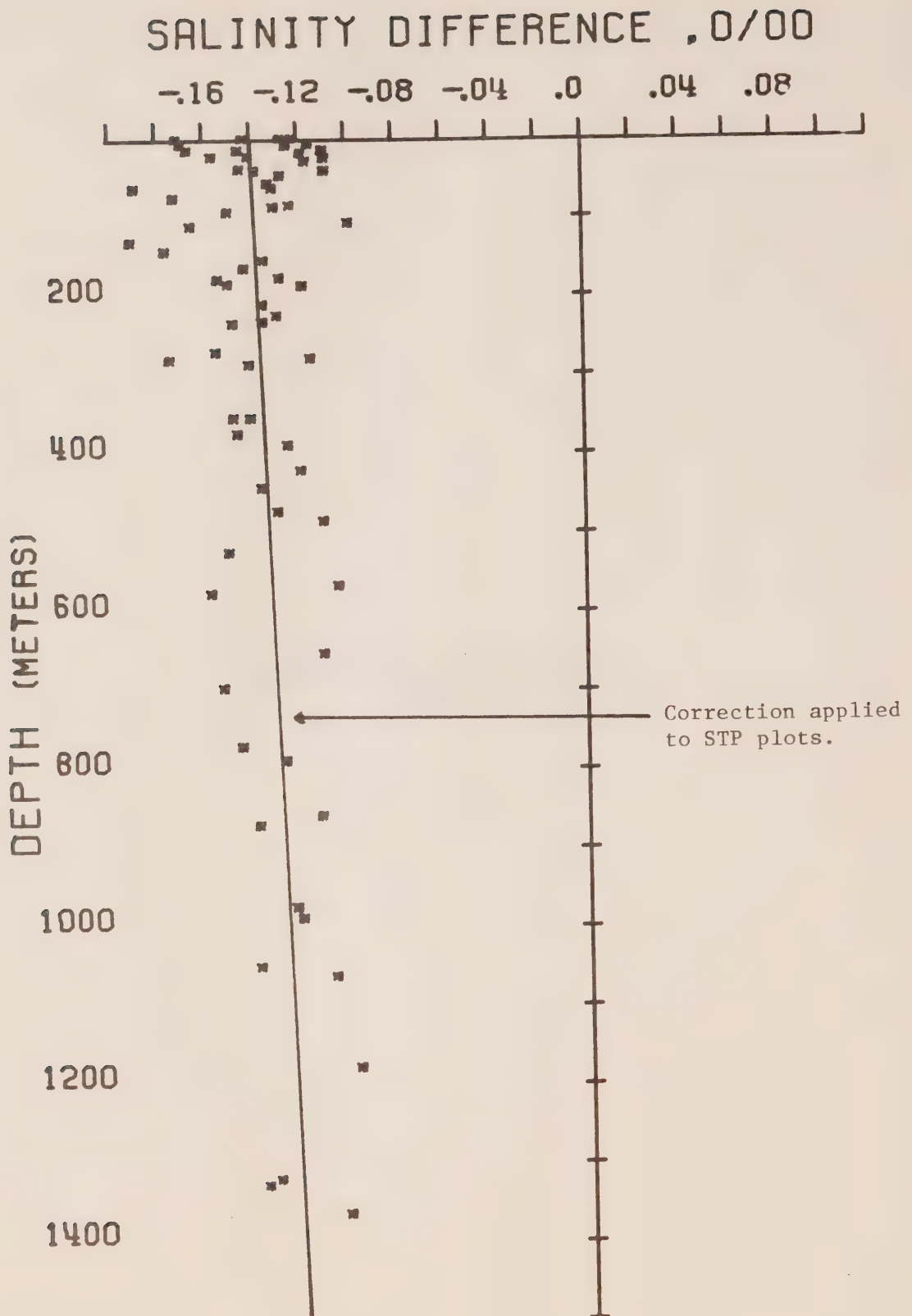


Figure 7. Salinity difference between hydro data and STP. P-76-8.

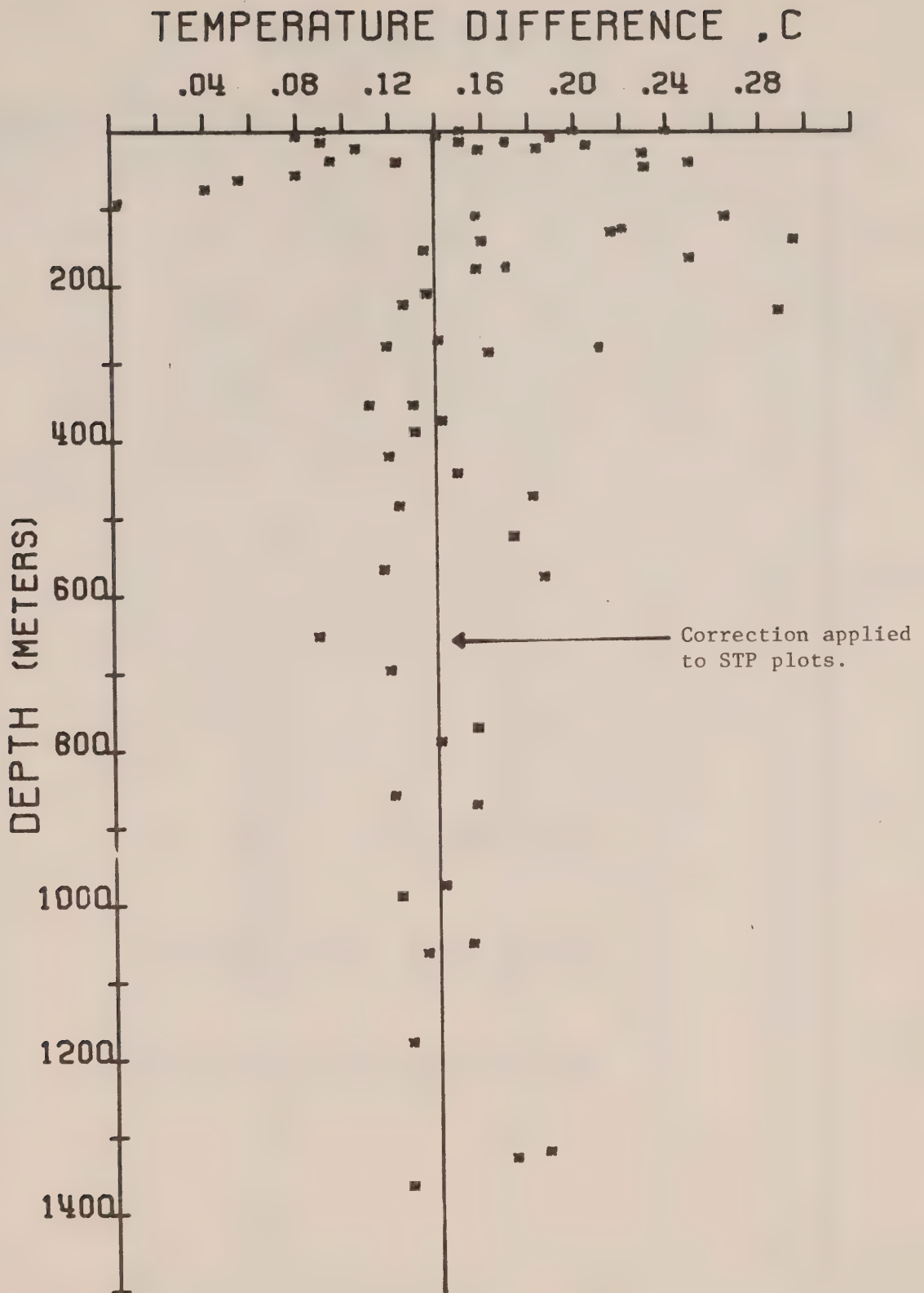
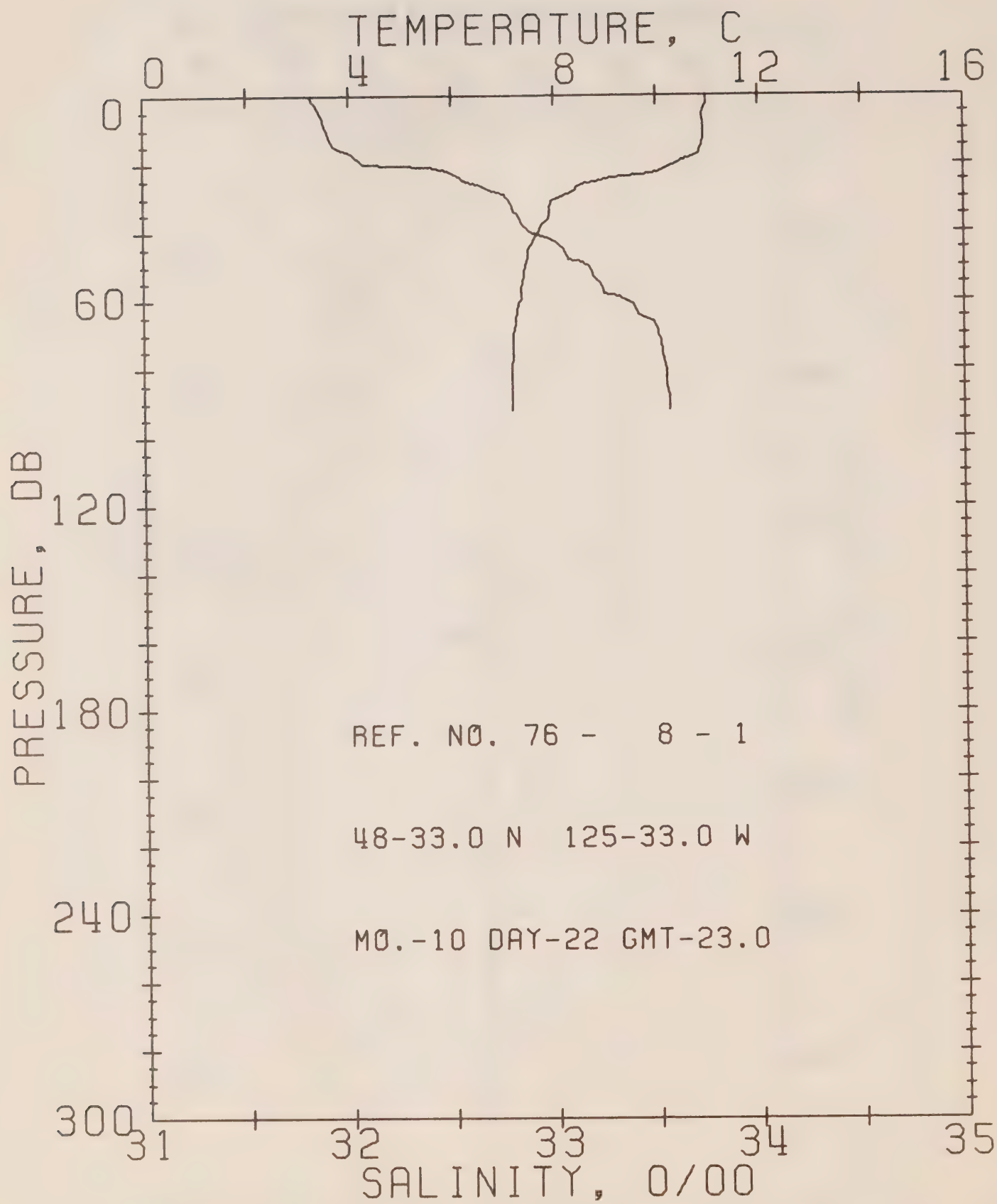


Figure 8. Temperature difference between hydro data and STP. P-76-8.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 1

DATE 22/10/76

STATION 1

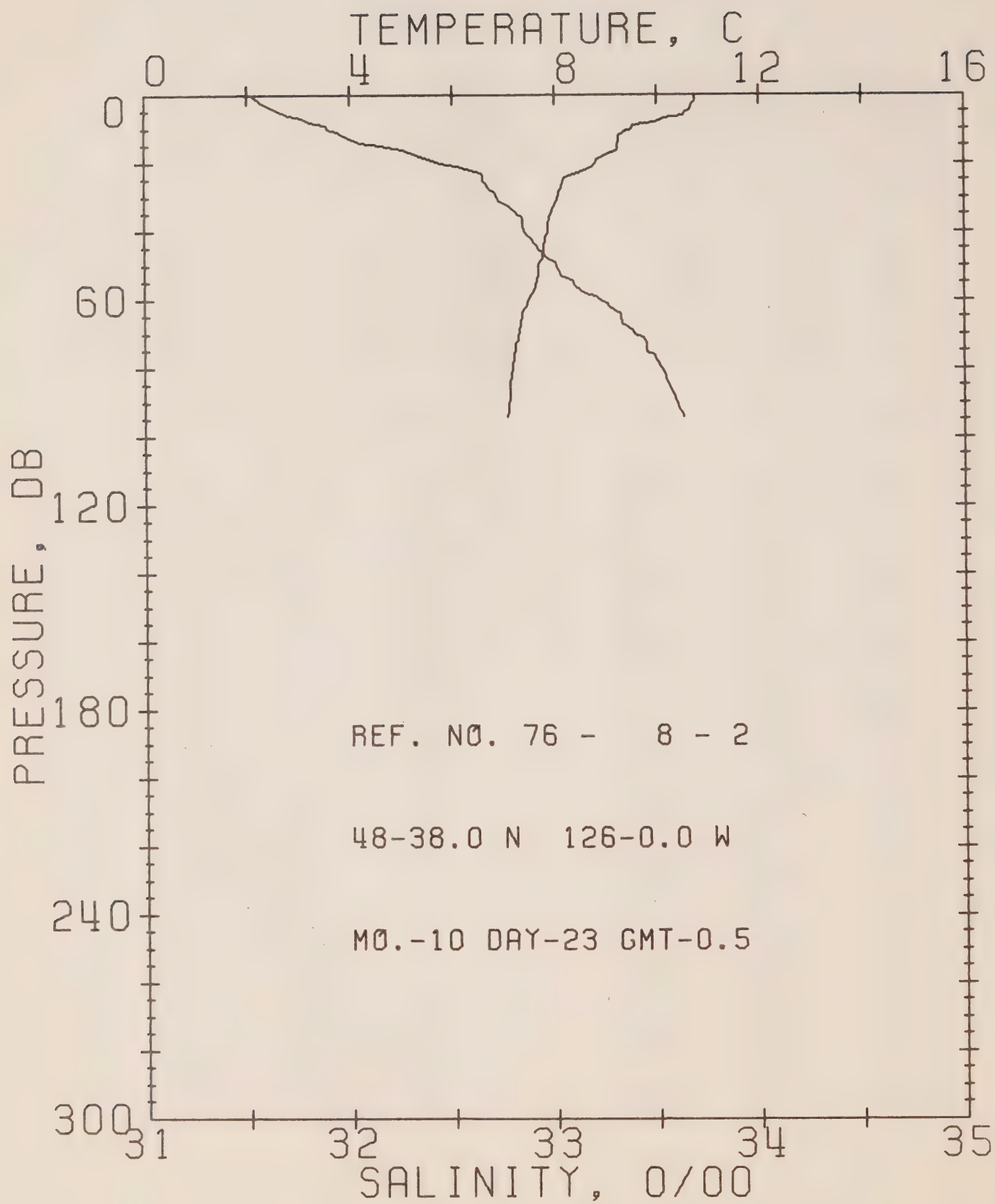
POSITION 48-33.0N, 125-33.0W

GMT 23.0

RESULTS OF STP CAST 58 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.99	31.81	0	24.32	361.4	0.0	0.0	1490.
10	10.92	31.89	10	24.39	355.0	0.36	0.02	1490.
20	10.39	32.07	20	24.63	332.9	0.71	0.07	1488.
30	8.08	32.77	30	25.54	246.3	0.96	0.14	1481.
50	7.44	33.17	50	25.94	208.1	1.44	0.33	1479.
75	7.19	33.53	75	26.26	178.4	1.92	0.63	1479.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	10.99	31.81	41.	7.66	32.92
2.	10.99	31.83	42.	7.62	32.98
3.	10.99	31.84	43.	7.59	33.01
4.	10.94	31.85	45.	7.50	33.05
6.	10.91	31.87	48.	7.48	33.07
9.	10.92	31.88	49.	7.46	33.14
12.	10.92	31.90	50.	7.44	33.17
15.	10.91	31.92	52.	7.41	33.19
16.	10.86	31.97	53.	7.41	33.19
17.	10.86	32.01	55.	7.40	33.22
18.	10.73	32.03	57.	7.37	33.24
19.	10.51	32.05	58.	7.37	33.24
20.	10.39	32.07	59.	7.36	33.32
21.	10.23	32.39	60.	7.36	33.35
22.	10.10	32.48	61.	7.31	33.38
23.	9.93	32.51	64.	7.27	33.41
24.	9.12	32.54	65.	7.26	33.44
25.	8.80	32.57	66.	7.25	33.48
26.	8.53	32.63	67.	7.25	33.49
27.	8.45	32.66	69.	7.22	33.51
28.	8.39	32.70	70.	7.21	33.51
29.	8.26	32.75	72.	7.20	33.52
30.	8.08	32.77	76.	7.19	33.53
31.	7.96	32.78	81.	7.17	33.55
34.	7.93	32.80	85.	7.17	33.55
35.	7.91	32.82	88.	7.16	33.56
36.	7.89	32.83	89.	7.16	33.56
38.	7.76	32.85	90.	7.16	33.56
40.	7.70	32.88	92.	7.16	33.56



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REFERENCE NO. 76- 8- 2

DATE 23/10/76

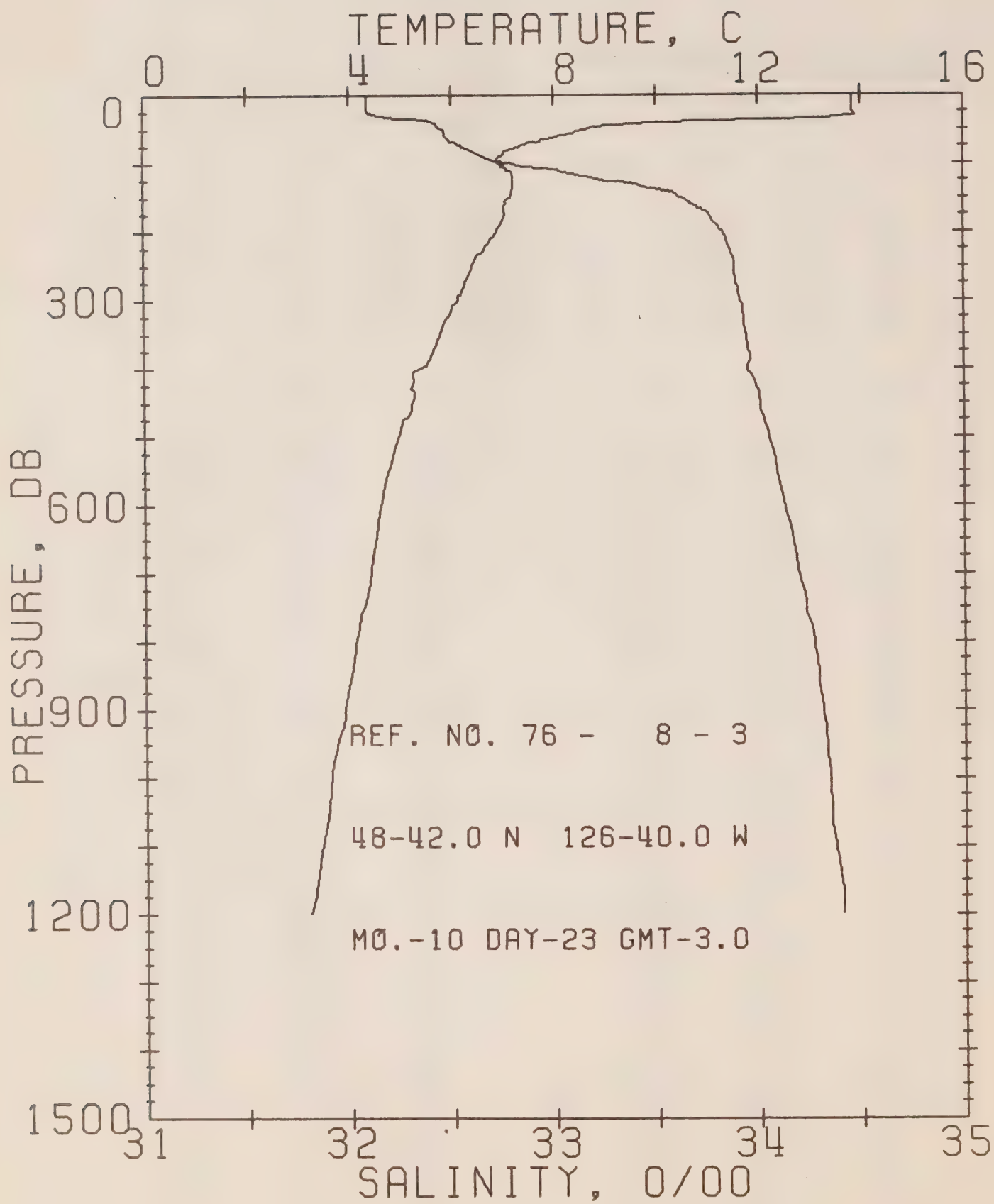
STATION 2

POSITION 48-38.0N, 126- 0.0W GMT 0.5

RESULTS OF STP CAST 73 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.74	31.52	0	24.14	378.7	0.0	0.0	1489.
10	9.52	31.89	10	24.63	332.4	0.36	0.02	1485.
20	8.79	32.44	20	25.17	280.8	0.67	0.06	1483.
30	8.06	32.71	30	25.50	250.2	0.93	0.13	1481.
50	7.68	33.01	50	25.78	223.2	1.40	0.32	1480.
75	7.22	33.45	75	26.19	184.6	1.91	0.64	1479.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	10.74	31.52	49.	7.72	33.00
2.	10.74	31.56	50.	7.68	33.01
3.	10.69	31.58	53.	7.67	33.03
4.	10.67	31.63	54.	7.66	33.08
5.	10.57	31.67	55.	7.62	33.10
6.	10.52	31.70	58.	7.56	33.15
7.	10.12	31.77	59.	7.52	33.20
8.	9.98	31.80	60.	7.50	33.22
9.	9.54	31.88	61.	7.47	33.25
10.	9.52	31.89	62.	7.43	33.27
11.	9.37	31.94	63.	7.40	33.29
12.	9.25	31.97	64.	7.37	33.32
14.	9.24	32.05	65.	7.35	33.32
15.	9.23	32.15	67.	7.34	33.33
16.	9.22	32.25	68.	7.33	33.36
17.	9.11	32.29	69.	7.32	33.38
19.	8.83	32.38	70.	7.30	33.39
20.	8.79	32.44	71.	7.29	33.43
21.	8.76	32.52	72.	7.28	33.44
22.	8.58	32.59	73.	7.23	33.45
23.	8.46	32.64	75.	7.22	33.45
24.	8.21	32.65	76.	7.21	33.49
25.	8.16	32.65	77.	7.21	33.49
26.	8.15	32.66	78.	7.19	33.50
27.	8.14	32.67	79.	7.17	33.51
29.	8.09	32.71	80.	7.16	33.52
31.	8.04	32.72	82.	7.15	33.54
33.	7.97	32.78	83.	7.14	33.54
34.	7.95	32.80	84.	7.13	33.55
36.	7.89	32.84	86.	7.12	33.57
38.	7.88	32.84	88.	7.11	33.58
40.	7.87	32.85	89.	7.11	33.59
42.	7.82	32.88	91.	7.10	33.60
45.	7.79	32.92	92.	7.09	33.61
46.	7.78	32.94	93.	7.09	33.62
47.	7.77	32.95	94.	7.08	33.63
48.	7.76	32.97			



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 3

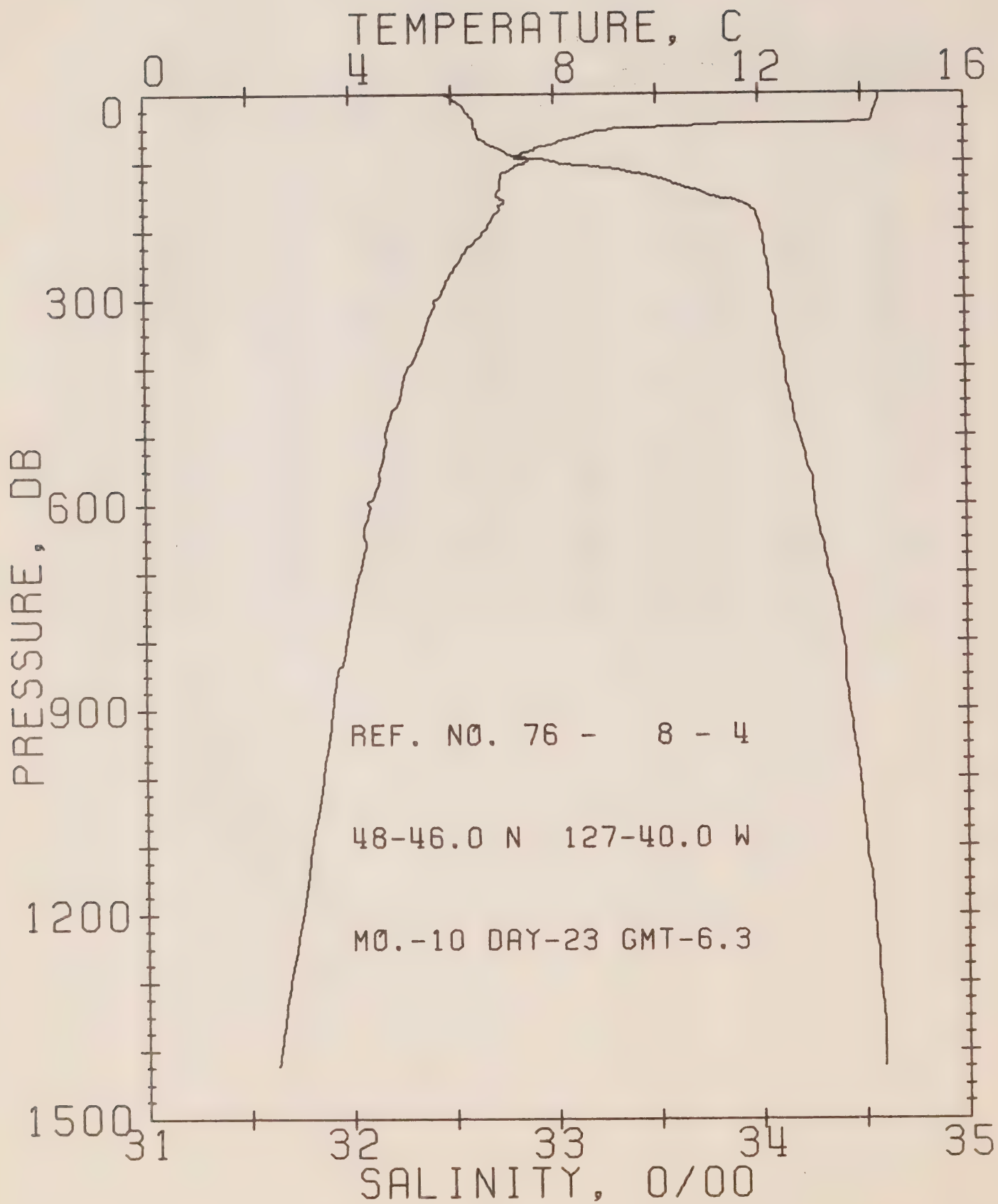
DATE 23/10/76

STATION 3

POSITION 48-42.0N, 126-40.0W GMT 3.0

RESULTS OF STP CAST 218 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.84	32.09	0	24.00	392.2	0.0	0.0	1500.
10	13.84	32.09	10	24.00	392.7	0.39	0.02	1500.
20	13.85	32.09	20	24.00	393.1	0.79	0.08	1500.
30	13.88	32.14	30	24.03	390.2	1.18	0.18	1501.
50	8.64	32.46	50	25.21	277.7	1.82	0.44	1483.
75	7.32	32.55	75	25.47	253.0	2.49	0.86	1478.
100	6.96	32.80	99	25.72	230.0	3.09	1.40	1478.
125	7.19	33.26	124	26.05	199.1	3.63	2.01	1480.
150	7.15	33.62	149	26.34	172.1	4.08	2.65	1480.
175	7.03	33.75	174	26.46	161.0	4.50	3.34	1480.
200	6.86	33.83	199	26.54	153.6	4.89	4.09	1480.
225	6.62	33.86	224	26.59	148.5	5.27	4.91	1480.
250	6.38	33.88	248	26.64	144.1	5.63	5.79	1479.
300	6.10	33.91	298	26.70	139.0	6.34	7.77	1479.
400	5.38	33.95	397	26.82	128.3	7.67	12.51	1478.
500	4.94	34.05	496	26.95	116.7	8.89	18.10	1478.
600	4.59	34.12	595	27.05	107.9	10.01	24.38	1478.
800	4.10	34.27	793	27.22	93.4	12.03	38.73	1479.
1000	3.60	34.34	991	27.33	83.8	13.80	54.94	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 4

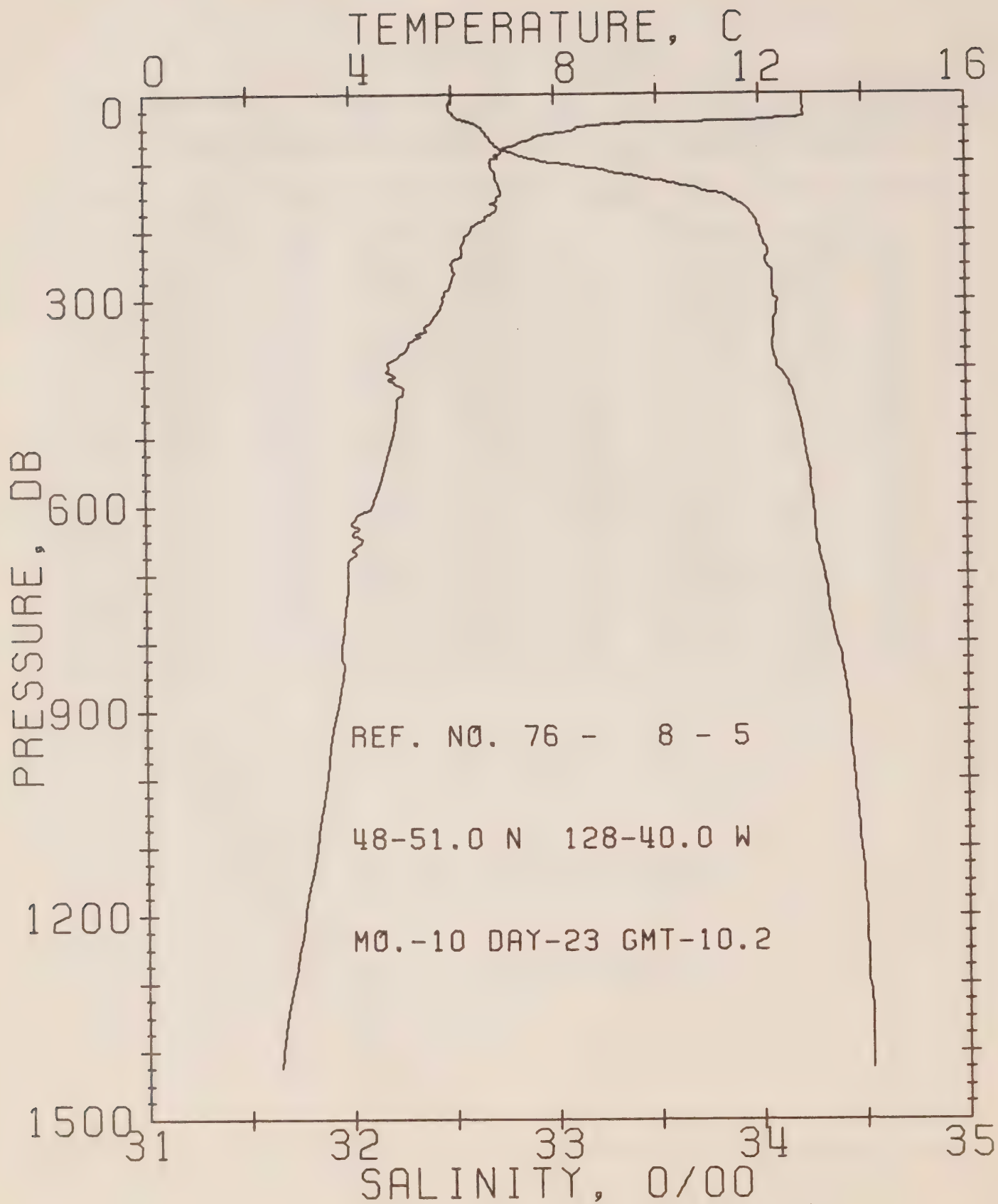
DATE 23/10/76

STATION 4

POSITION 48-46.0N, 127-40.0W GMT 6.3

RESULTS OF STP CAST 226 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.34	32.47	0	24.19	374.1	0.0	0.0	1502.
10	14.33	32.52	10	24.23	370.9	0.37	0.02	1502.
20	14.28	32.56	20	24.27	367.3	0.74	0.03	1502.
30	14.22	32.58	30	24.30	364.5	1.11	0.17	1502.
50	9.80	32.61	50	25.14	284.0	1.80	0.45	1487.
75	7.78	32.70	75	25.53	248.0	2.45	0.86	1480.
100	7.45	33.01	99	25.82	220.8	3.04	1.39	1480.
125	6.92	33.54	124	26.30	174.7	3.53	1.94	1479.
150	6.87	33.77	149	26.49	157.2	3.95	2.53	1479.
175	6.84	33.99	174	26.67	141.1	4.31	3.14	1480.
200	6.62	34.01	199	26.71	136.8	4.66	3.80	1480.
225	6.28	34.03	223	26.78	131.3	5.00	4.53	1479.
250	6.08	34.04	248	26.81	128.4	5.32	5.31	1475.
300	5.68	34.06	298	26.87	122.6	5.95	7.07	1477.
400	5.12	34.12	397	26.99	112.3	7.13	11.26	1477.
500	4.68	34.19	496	27.10	102.8	8.20	16.20	1477.
600	4.35	34.26	595	27.19	95.1	9.19	21.74	1477.
800	3.89	34.40	793	27.35	81.2	10.96	34.26	1474.
1000	3.42	34.48	991	27.45	71.8	12.49	48.27	1480.
1200	3.01	34.54	1188	27.54	63.6	13.84	63.38	1482.



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REFERENCE NO. 76- 8- 5

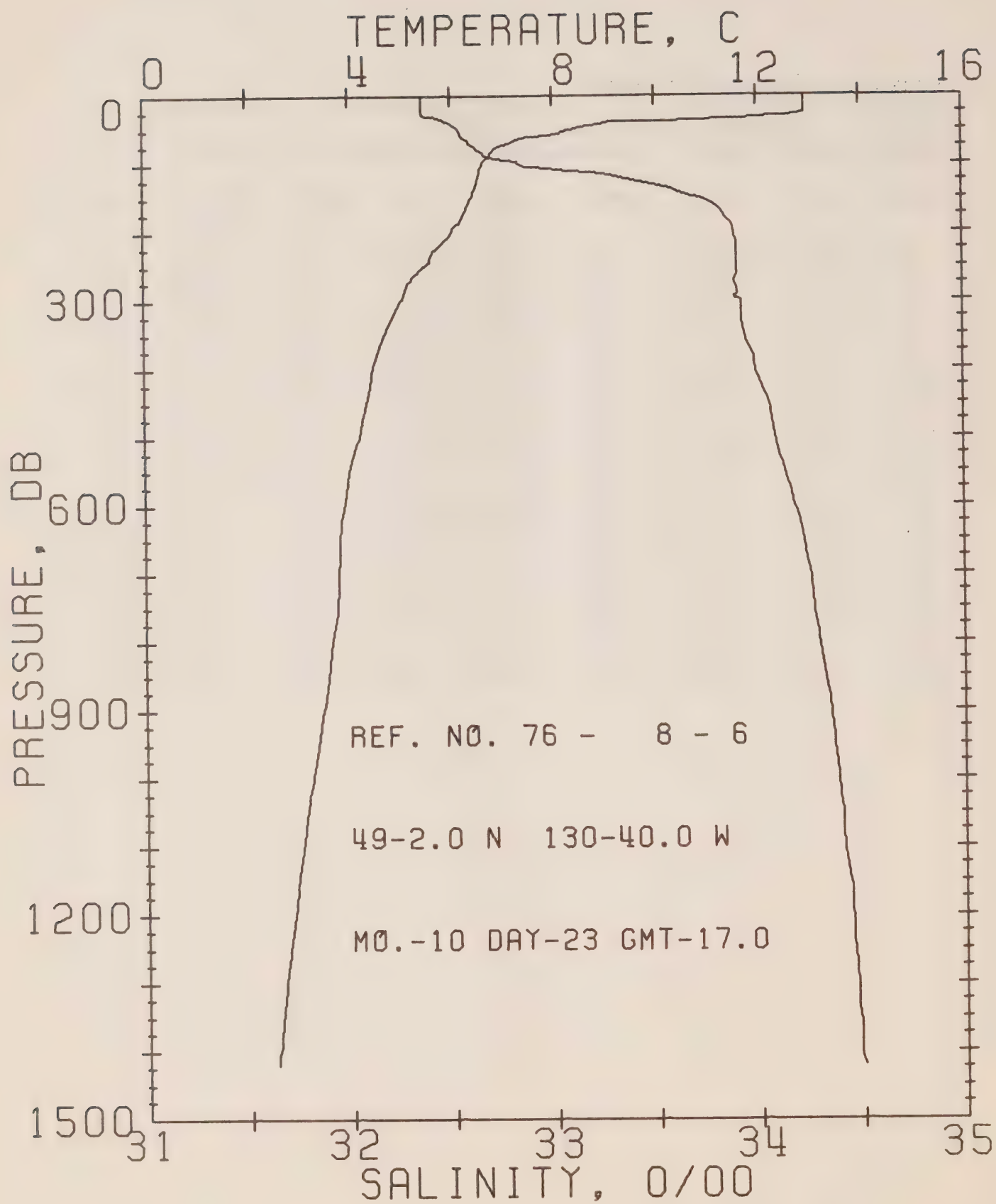
DATE 23/10/76

STATION 5

POSITION 48-51.0N, 128-40.0W. GMT 10.2

RESULTS OF STP CAST 215 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.85	32.51	0	24.52	342.5	0.0	0.0	1497.
10	12.85	32.50	10	24.51	343.9	0.34	0.02	1497.
20	12.87	32.49	20	24.50	345.2	0.69	0.07	1498.
30	12.87	32.51	30	24.51	344.0	1.03	0.16	1498.
50	8.45	32.64	50	25.38	261.2	1.65	0.41	1482.
75	7.19	32.72	75	25.62	238.6	2.27	0.80	1478.
100	6.73	32.99	99	25.90	212.9	2.84	1.31	1477.
125	6.87	33.49	124	26.27	177.7	3.33	1.86	1479.
150	6.91	33.84	149	26.55	152.2	3.74	2.44	1480.
175	6.76	33.96	174	26.65	142.2	4.11	3.05	1480.
200	6.33	34.00	199	26.74	133.9	4.45	3.70	1478.
225	6.18	34.04	223	26.79	129.6	4.78	4.42	1478.
250	5.98	34.03	248	26.82	127.5	5.10	5.20	1478.
300	5.81	34.08	298	26.88	122.5	5.73	6.95	1478.
400	4.76	34.09	397	27.00	110.7	6.91	11.15	1475.
500	4.80	34.21	496	27.10	103.2	7.97	16.04	1477.
600	4.40	34.25	595	27.17	96.4	8.97	21.52	1477.
800	3.81	34.37	793	27.33	82.8	10.74	34.21	1478.
1000	3.48	34.45	990	27.42	74.6	12.31	48.54	1480.
1200	3.04	34.50	1188	27.51	67.0	13.72	64.37	1482.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 6

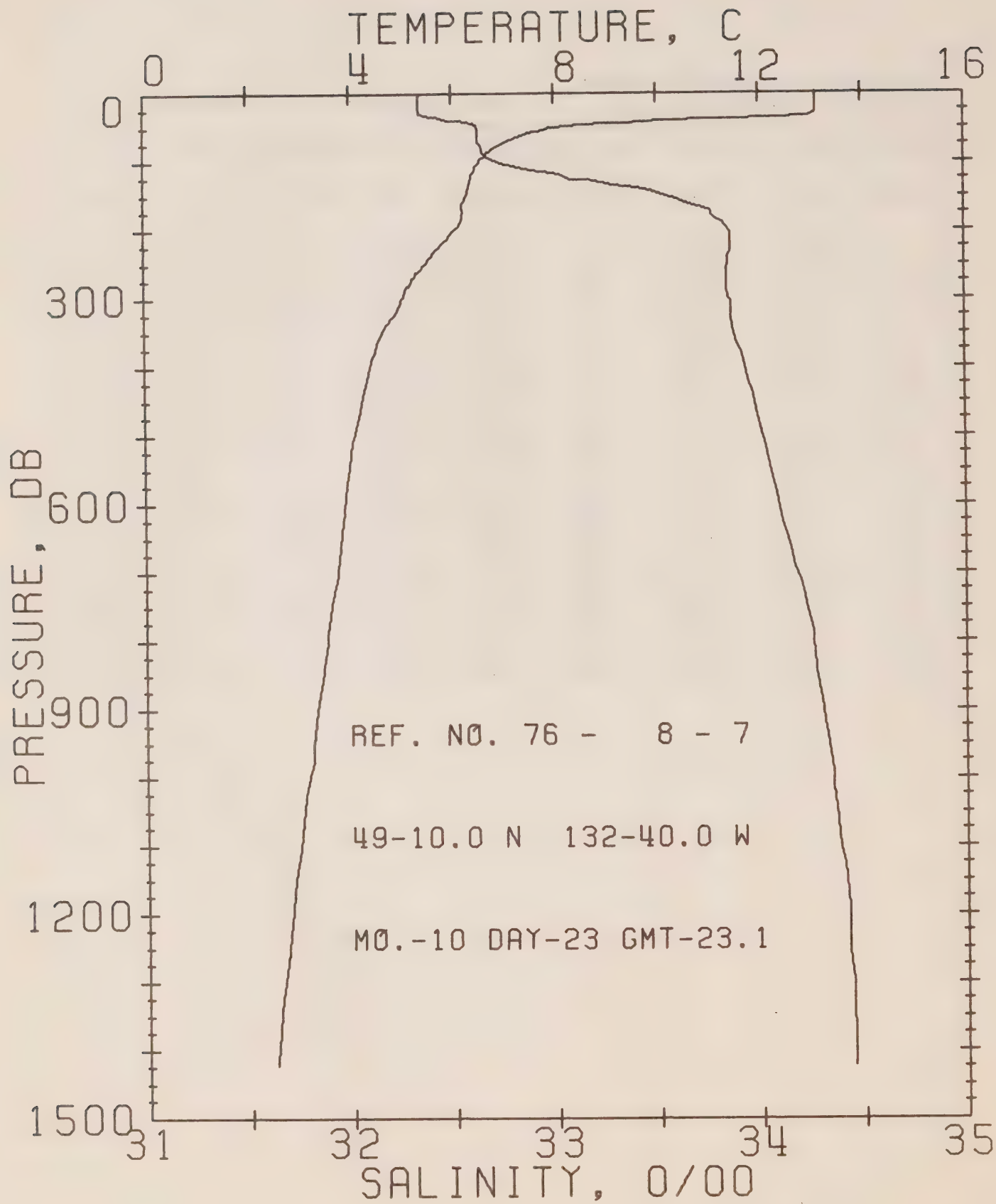
DATE 23/10/76

STATION 6

POSITION 49- 2.0N, 130-40.0W GMT 17.0

RESULTS OF STP CAST 167 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.93	32.36	0	24.39	355.0	0.0	0.0	1497.
10	12.93	32.36	10	24.39	355.5	0.36	0.02	1498.
20	12.94	32.36	20	24.39	355.9	0.71	0.07	1498.
30	12.61	32.39	30	24.47	347.8	1.07	0.16	1497.
50	8.35	32.54	50	25.32	267.6	1.66	0.40	1482.
75	6.94	32.62	75	25.58	243.0	2.29	0.81	1477.
100	6.61	32.84	99	25.80	222.3	2.88	1.33	1476.
125	6.51	33.40	124	26.25	179.5	3.38	1.90	1477.
150	6.38	33.73	149	26.53	153.9	3.80	2.48	1477.
175	6.22	33.84	174	26.63	144.3	4.17	3.09	1477.
200	5.99	33.88	199	26.70	138.3	4.52	3.77	1477.
225	5.69	33.90	223	26.75	133.7	4.86	4.50	1476.
250	5.46	33.90	248	26.77	131.2	5.19	5.31	1476.
300	5.00	33.91	298	26.84	125.7	5.83	7.11	1474.
400	4.46	33.99	397	26.96	114.8	7.03	11.39	1474.
500	4.17	34.08	496	27.06	105.5	8.13	16.40	1475.
600	3.88	34.18	595	27.17	96.1	9.13	22.03	1475.
800	3.62	34.29	793	27.29	86.2	10.95	34.92	1477.
1000	3.22	34.38	991	27.39	76.6	12.57	49.78	1479.
1200	2.85	34.45	1188	27.48	68.9	14.02	66.03	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 7

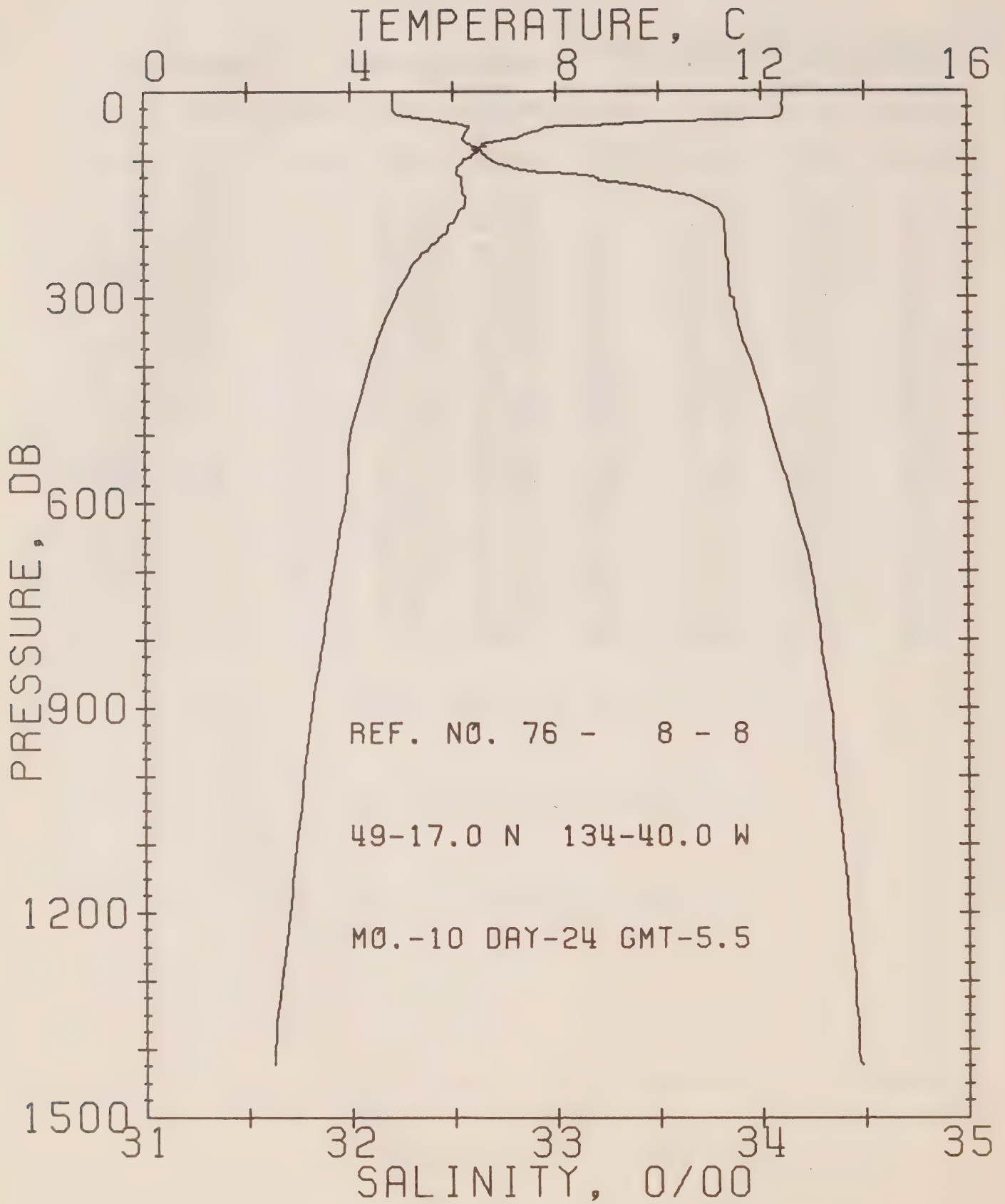
DATE 23/10/76

STATION 7

POSITION 49-10.0N, 132-40.0W GMT 23.1

RESULTS OF STP CAST 156 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.11	32.35	0	24.34	359.1	0.0	0.0	1498.
10	13.11	32.34	10	24.34	360.3	0.36	0.02	1498.
20	13.12	32.34	20	24.34	360.7	0.72	0.07	1498.
30	13.11	32.34	30	24.34	360.8	1.08	0.17	1498.
50	8.05	32.62	50	25.42	257.4	1.70	0.41	1481.
75	6.97	32.63	75	25.59	242.2	2.32	0.81	1477.
100	6.53	32.72	99	25.71	230.6	2.91	1.33	1476.
125	6.35	33.08	124	26.02	201.7	3.45	1.95	1476.
150	6.26	33.55	149	26.40	165.9	3.90	2.58	1477.
175	6.20	33.77	174	26.58	149.4	4.29	3.23	1477.
200	6.03	33.85	199	26.66	141.4	4.66	3.93	1477.
225	5.72	33.86	223	26.71	137.1	5.00	4.68	1476.
250	5.44	33.85	248	26.74	134.7	5.34	5.50	1475.
300	5.00	33.85	298	26.79	130.1	6.01	7.36	1474.
400	4.37	33.93	397	26.92	118.2	7.25	11.78	1474.
500	4.06	34.01	496	27.02	109.3	8.39	16.99	1474.
600	3.88	34.09	595	27.10	102.4	9.44	22.91	1475.
800	3.51	34.25	793	27.26	88.1	11.34	36.39	1477.
1000	3.15	34.35	991	27.38	78.0	13.00	51.58	1479.
1200	2.79	34.42	1188	27.47	70.1	14.48	68.12	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 8

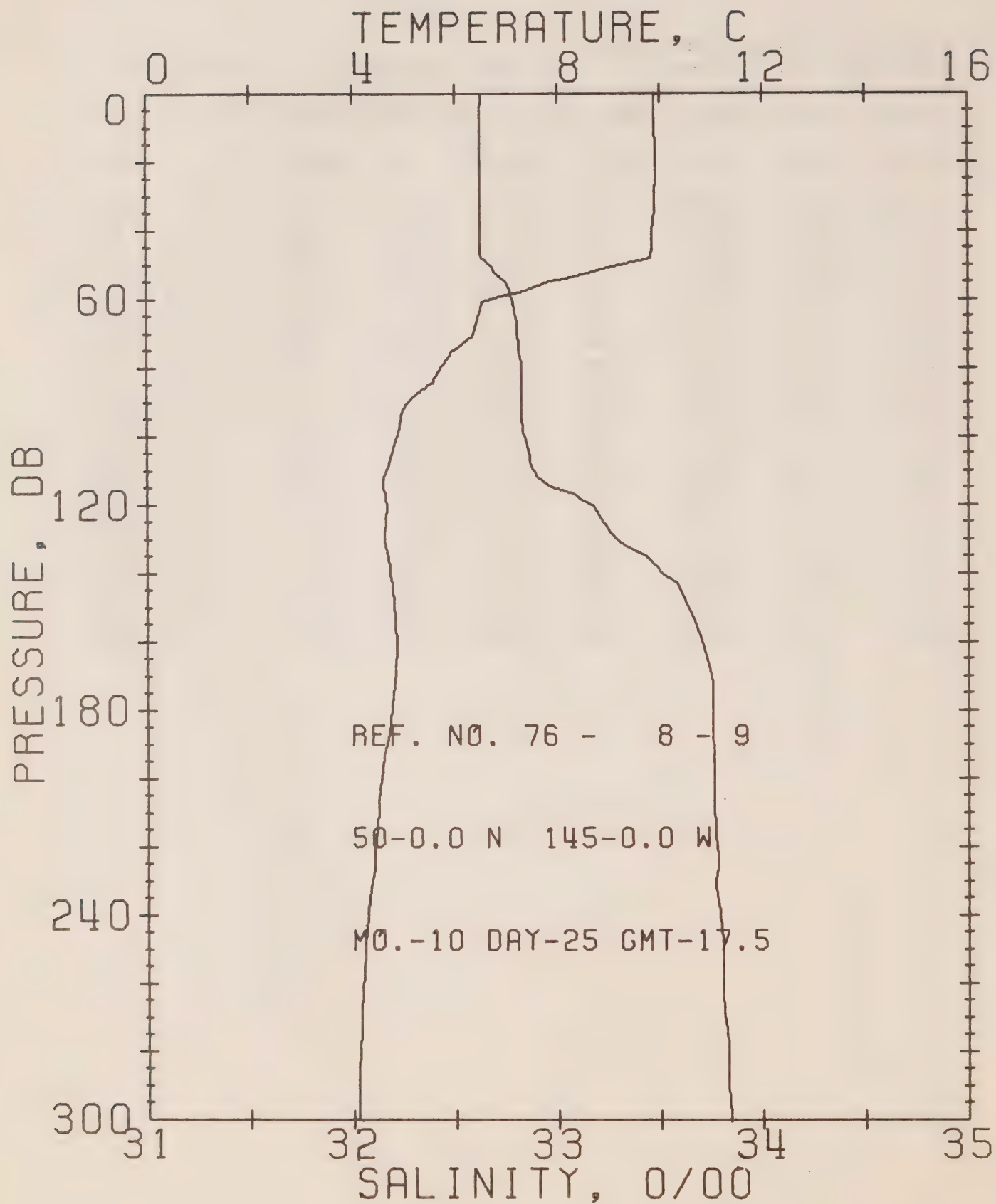
DATE 24/10/76

STATION 8

POSITION 49-17.0N. 134-40.0W GMT 5.5

RESULTS OF STP CAST 156 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.42	32.21	0	24.37	356.7	0.0	0.0	1495.
10	12.42	32.21	10	24.37	357.2	0.36	0.02	1496.
20	12.41	32.21	20	24.37	357.2	0.71	0.07	1496.
30	12.41	32.22	30	24.38	357.1	1.07	0.16	1496.
50	8.65	32.57	50	25.30	269.6	1.73	0.43	1483.
75	6.55	32.57	75	25.59	241.7	2.36	0.83	1475.
100	6.21	32.69	99	25.73	229.1	2.95	1.35	1474.
125	6.15	33.19	124	26.13	191.0	3.48	1.97	1475.
150	6.22	33.61	149	26.45	160.9	3.93	2.59	1477.
175	6.10	33.79	174	26.61	146.1	4.31	3.22	1477.
200	5.88	33.82	199	26.66	141.7	4.67	3.90	1476.
225	5.55	33.83	223	26.71	137.3	5.02	4.66	1475.
250	5.23	33.84	248	26.75	133.0	5.36	5.48	1475.
300	4.88	33.85	298	26.80	128.7	6.01	7.31	1474.
400	4.34	33.96	397	26.95	115.7	7.23	11.66	1473.
500	3.99	34.05	496	27.06	105.8	8.34	16.72	1474.
600	3.88	34.15	595	27.15	98.0	9.35	22.42	1475.
800	3.44	34.28	793	27.30	84.7	11.16	35.26	1477.
1000	3.06	34.35	991	27.39	76.7	12.75	49.91	1478.
1200	2.78	34.42	1188	27.46	70.2	14.22	66.31	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 9

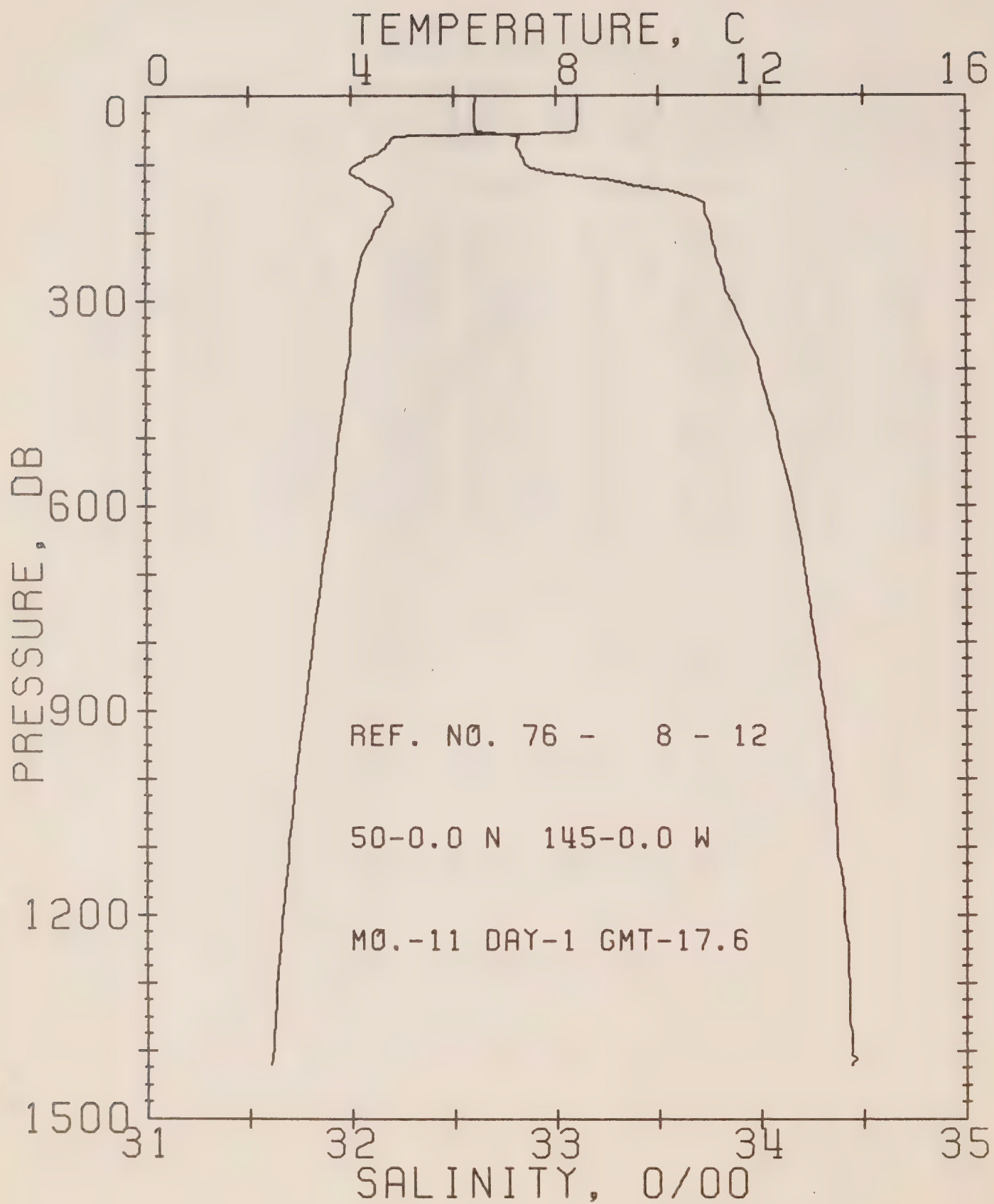
DATE 25/10/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 102 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	9.90	32.63	0	25.14	283.0	0.0	0.0	1487.
10	9.90	32.62	10	25.14	284.2	0.28	0.01	1487.
20	9.91	32.62	20	25.13	284.5	0.57	0.06	1487.
30	9.90	32.62	30	25.14	284.5	0.85	0.13	1487.
50	9.20	32.67	50	25.29	270.4	1.42	0.36	1485.
75	5.91	32.81	75	25.86	215.9	2.00	0.73	1473.
100	4.85	32.83	99	26.00	202.5	2.52	1.19	1469.
125	4.63	33.22	124	26.33	171.6	3.00	1.74	1469.
150	4.80	33.64	149	26.64	142.3	3.38	2.28	1471.
175	4.77	33.75	174	26.74	133.7	3.73	2.84	1471.
200	4.54	33.76	199	26.77	130.7	4.06	3.48	1471.
225	4.40	33.78	223	26.80	128.0	4.36	4.18	1471.
250	4.21	33.80	248	26.84	124.7	4.70	4.94	1470.
300	4.07	33.84	298	26.88	120.5	5.31	6.65	1470.



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REFERENCE NO. 76- 8- 12

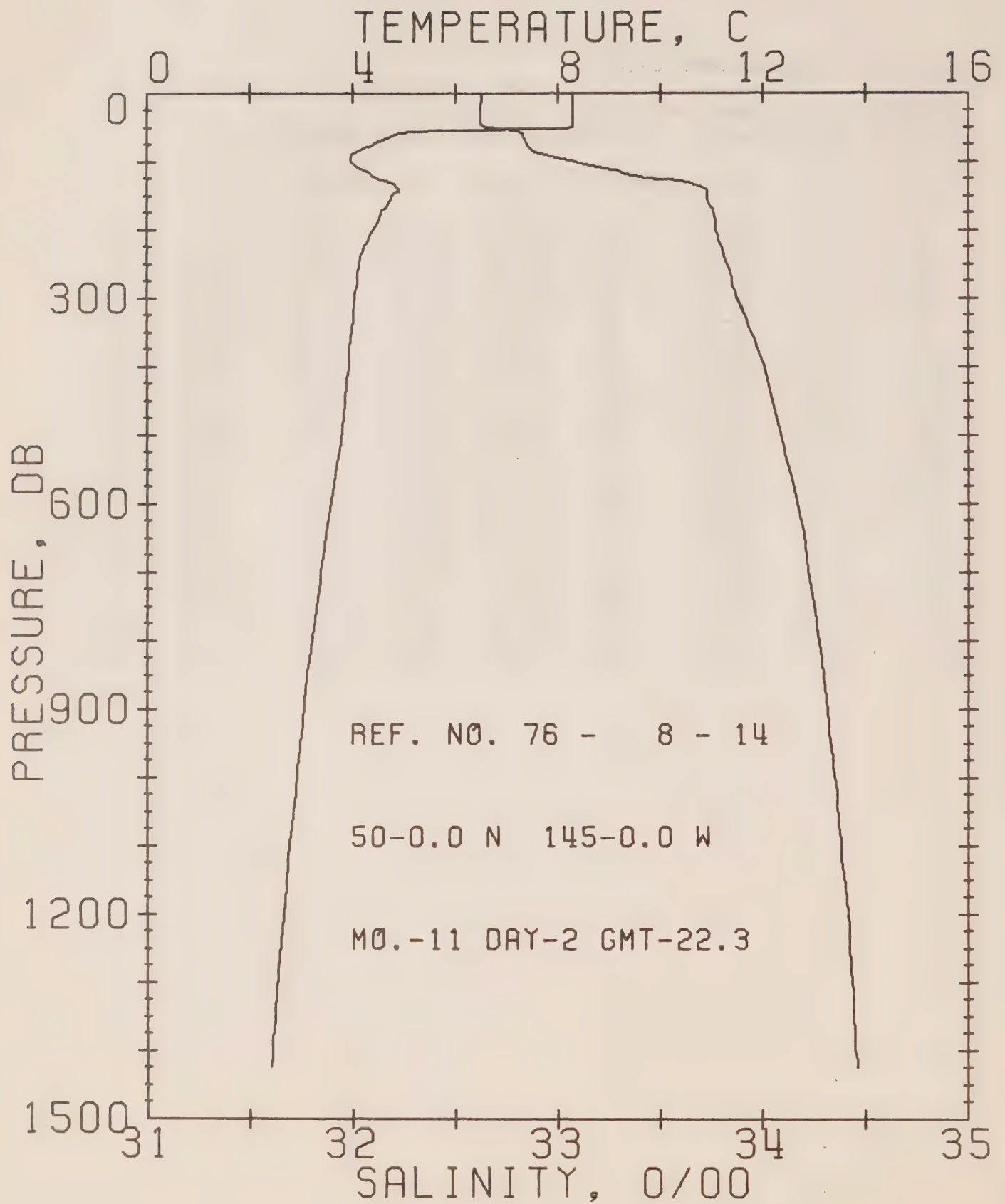
DATE 1/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.6

RESULTS OF STP CAST 151 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.43	32.61	0	25.36	262.5	0.0	0.0	1481.
10	8.43	32.61	10	25.36	263.0	0.26	0.01	1482.
20	8.42	32.60	20	25.35	263.7	0.53	0.05	1482.
30	8.43	32.60	30	25.35	263.8	0.79	0.12	1482.
50	8.39	32.61	50	25.37	262.9	1.32	0.34	1482.
75	4.67	32.81	75	26.00	202.2	1.86	0.66	1468.
100	4.14	32.85	99	26.09	194.1	2.36	1.12	1466.
125	4.24	33.27	124	26.41	163.8	2.81	1.64	1468.
150	4.77	33.67	149	26.67	139.3	3.19	2.17	1471.
175	4.63	33.73	174	26.74	133.7	3.53	2.73	1471.
200	4.45	33.76	199	26.78	129.9	3.86	3.36	1470.
225	4.25	33.78	223	26.81	126.6	4.18	4.05	1470.
250	4.14	33.80	248	26.84	124.0	4.49	4.81	1470.
300	4.02	33.85	298	26.90	119.1	5.10	6.52	1470.
400	3.92	33.99	397	27.02	108.4	6.24	10.56	1472.
500	3.73	34.08	496	27.11	100.7	7.28	15.35	1473.
600	3.59	34.16	595	27.18	94.0	8.26	20.80	1474.
800	3.23	34.26	793	27.30	84.2	10.03	33.44	1476.
1000	2.89	34.35	990	27.40	75.1	11.62	48.00	1478.
1200	2.63	34.40	1188	27.46	69.8	13.07	64.23	1480.



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REFERENCE NO. 76- 8- 14

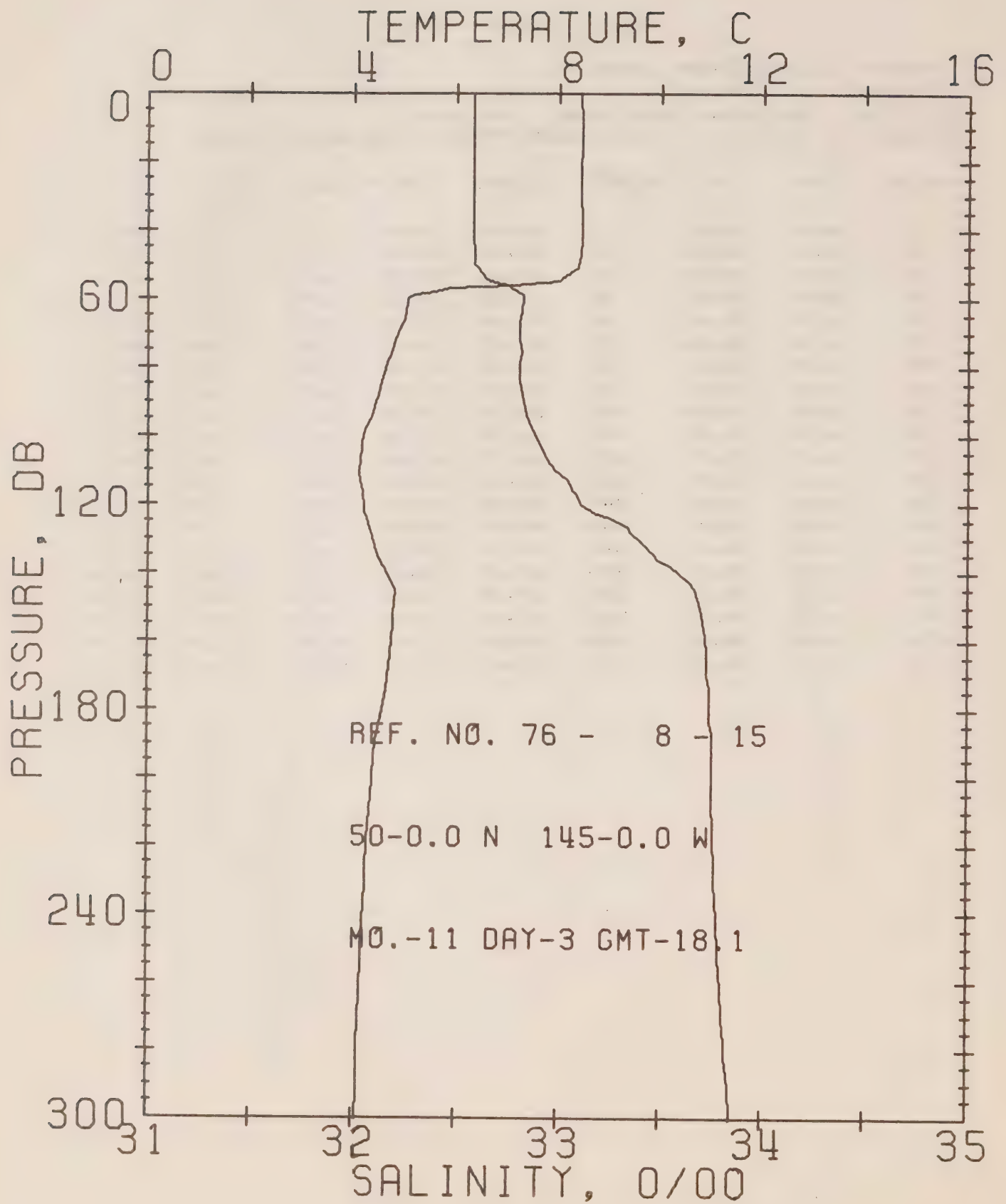
DATE 2/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 22.3

RESULTS OF STP CAST 132 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.28	32.63	0	25.40	258.9	0.0	0.0	1431.
10	8.28	32.63	10	25.40	259.2	0.26	0.01	1431.
20	8.29	32.62	20	25.39	260.1	0.52	0.05	1431.
30	8.29	32.62	30	25.39	260.5	0.78	0.12	1431.
50	8.28	32.64	50	25.41	259.1	1.30	0.33	1432.
75	4.36	32.85	75	26.07	196.1	1.82	0.60	1467.
100	3.97	33.07	99	26.28	175.6	2.29	1.08	1450.
125	4.49	33.46	124	26.54	151.7	2.70	1.55	1459.
150	4.77	33.73	149	26.72	135.0	3.05	2.04	1471.
175	4.54	33.75	174	26.76	131.0	3.39	2.59	1470.
200	4.37	33.77	199	26.79	128.2	3.71	3.21	1470.
225	4.21	33.80	223	26.83	124.6	4.03	3.89	1470.
250	4.11	33.82	248	26.86	122.3	4.33	4.64	1470.
300	4.02	33.87	298	26.91	118.0	4.93	6.32	1470.
400	3.91	34.01	397	27.03	107.2	6.05	10.31	1472.
500	3.77	34.09	496	27.11	100.5	7.09	15.07	1473.
600	3.57	34.17	595	27.19	93.3	8.06	20.49	1474.
800	3.19	34.27	793	27.31	82.9	9.82	32.93	1476.
1000	2.90	34.35	990	27.40	75.4	11.40	47.45	1478.
1200	2.65	34.41	1188	27.47	68.8	12.84	63.59	1430.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 15

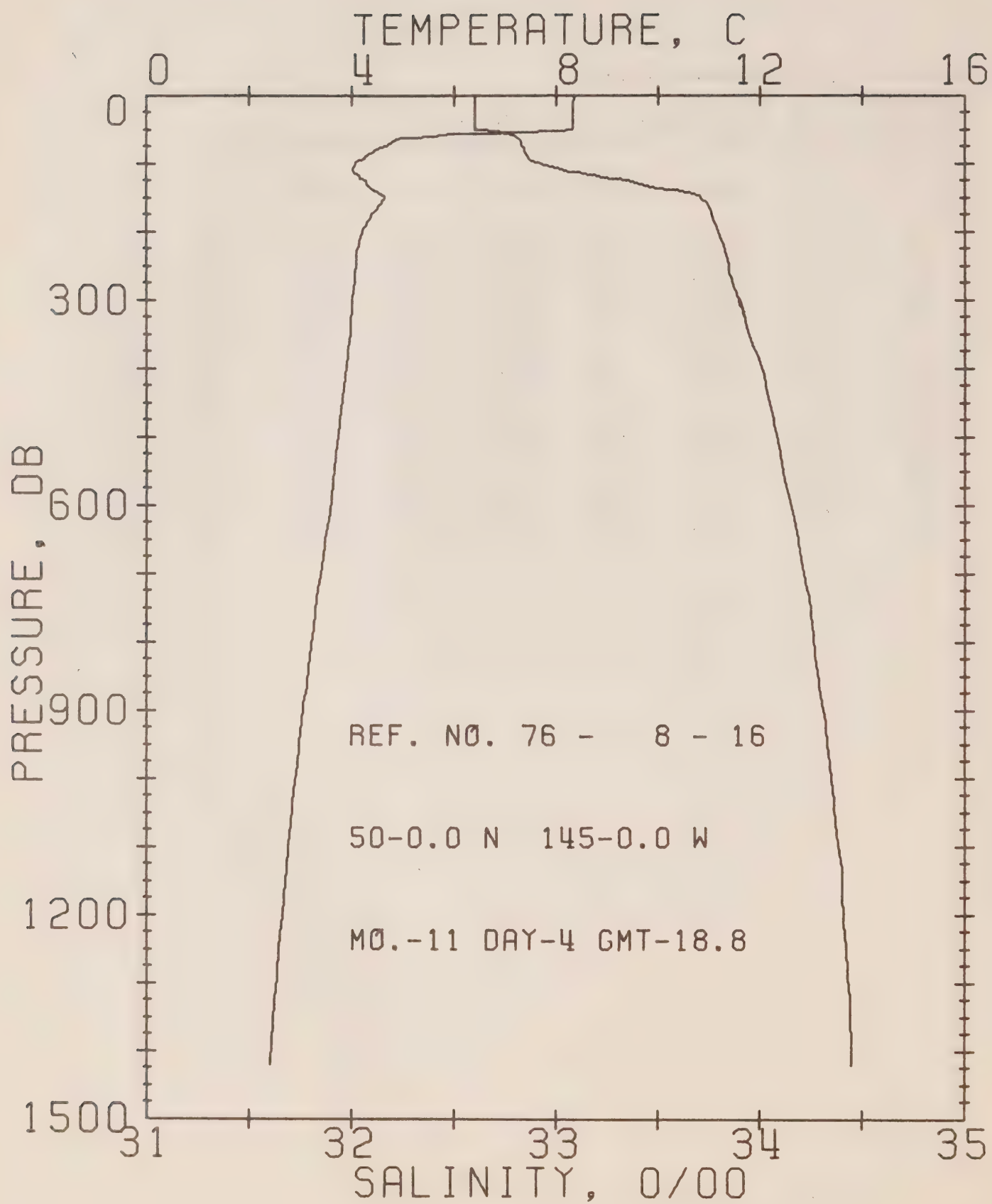
DATE 3/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.1

RESULTS OF STP CAST 86 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	3.44	32.58	0	25.34	264.9	0.0	0.0	1481.
10	8.45	32.58	10	25.33	265.3	0.27	0.01	1482.
20	3.44	32.58	20	25.33	265.4	0.53	0.05	1482.
30	8.44	32.58	30	25.33	265.5	0.80	0.12	1482.
50	8.38	32.59	50	25.35	264.2	1.33	0.34	1482.
75	4.73	32.82	75	26.00	202.3	1.87	0.68	1488.
100	4.19	32.88	99	26.11	191.9	2.37	1.13	1466.
125	4.29	33.28	124	26.42	163.4	2.82	1.64	1468.
150	4.79	33.69	149	26.69	138.1	3.19	2.16	1471.
175	4.62	33.74	174	26.74	132.9	3.53	2.72	1471.
200	4.37	33.75	199	26.78	129.7	3.86	3.35	1470.
225	4.25	33.77	223	26.81	127.3	4.18	4.04	1470.
250	4.16	33.79	248	26.83	125.1	4.50	4.81	1470.
300	4.05	33.85	298	26.89	119.7	5.11	6.52	1470.



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REFERENCE NO. 76- 8- 16

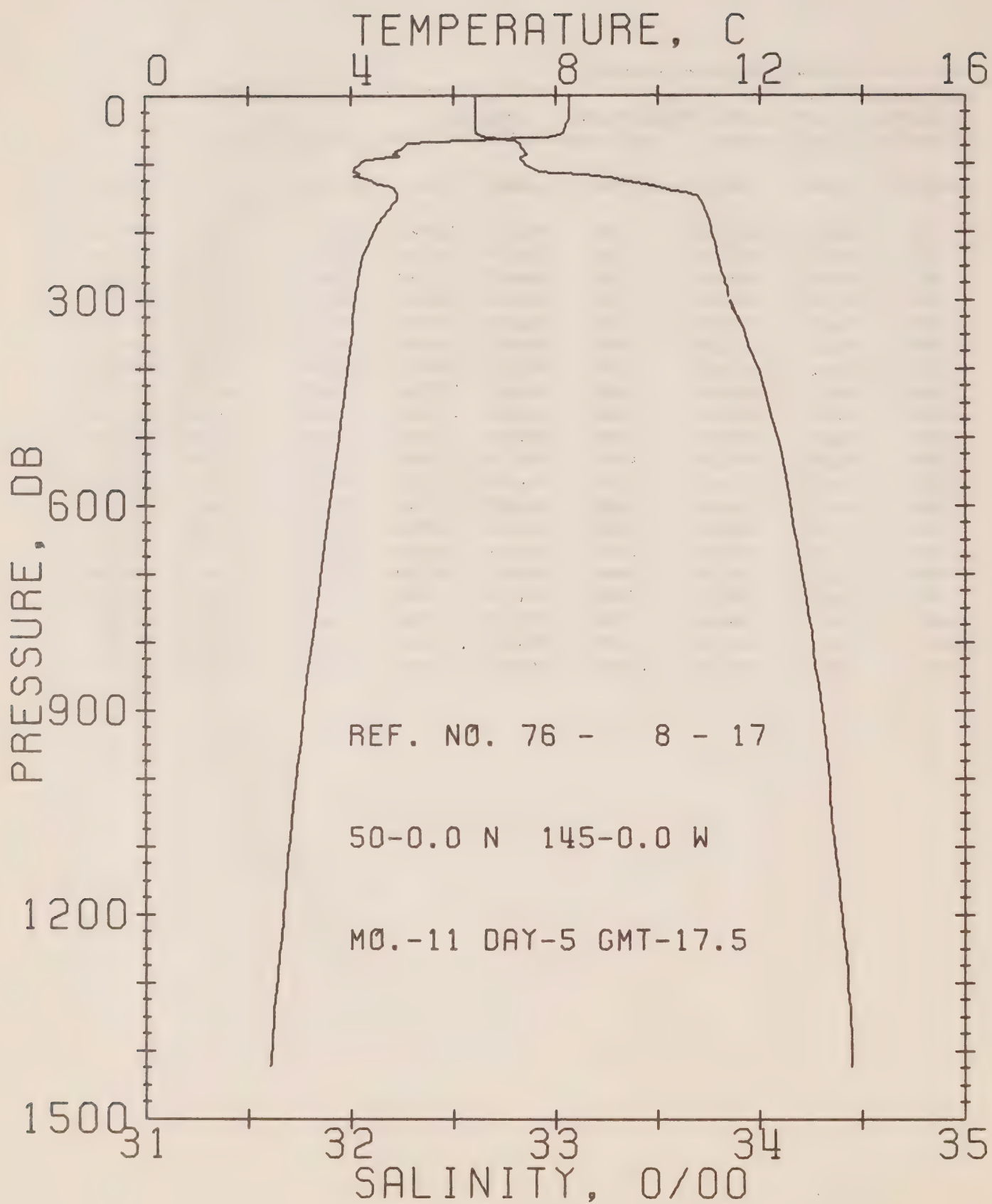
DATE 4/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.8

RESULTS OF STP CAST 132 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	8.29	32.60	0	25.37	261.2	0.0	0.0	1481.
10	8.33	32.60	10	25.37	262.1	0.26	0.01	1481.
20	8.32	32.60	20	25.37	262.2	0.52	0.05	1481.
30	8.32	32.60	30	25.37	262.4	0.79	0.12	1482.
50	8.30	32.60	50	25.37	262.4	1.31	0.33	1482.
75	4.63	32.83	75	26.02	200.2	1.85	0.68	1468.
100	4.04	32.92	99	26.15	187.8	2.34	1.11	1466.
125	4.28	33.36	124	26.48	157.4	2.76	1.61	1468.
150	4.62	33.71	149	26.72	134.9	3.14	2.12	1470.
175	4.39	33.76	174	26.79	128.8	3.47	2.66	1470.
200	4.20	33.79	199	26.83	124.6	3.78	3.26	1469.
225	4.10	33.83	223	26.87	121.3	4.09	3.93	1469.
250	4.08	33.85	248	26.89	119.7	4.39	4.66	1470.
300	3.99	33.91	298	26.95	114.3	4.95	6.31	1470.
400	3.88	34.01	397	27.04	106.8	6.09	10.27	1472.
500	3.72	34.08	496	27.11	100.4	7.13	15.01	1473.
600	3.58	34.15	595	27.18	94.7	8.11	20.49	1474.
800	3.21	34.26	793	27.30	83.8	9.86	33.10	1476.
1000	2.90	34.35	990	27.40	75.3	11.47	47.64	1478.
1200	2.63	34.41	1188	27.47	69.1	12.91	63.76	1480.



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REFERENCE NO. 76- 8- 17

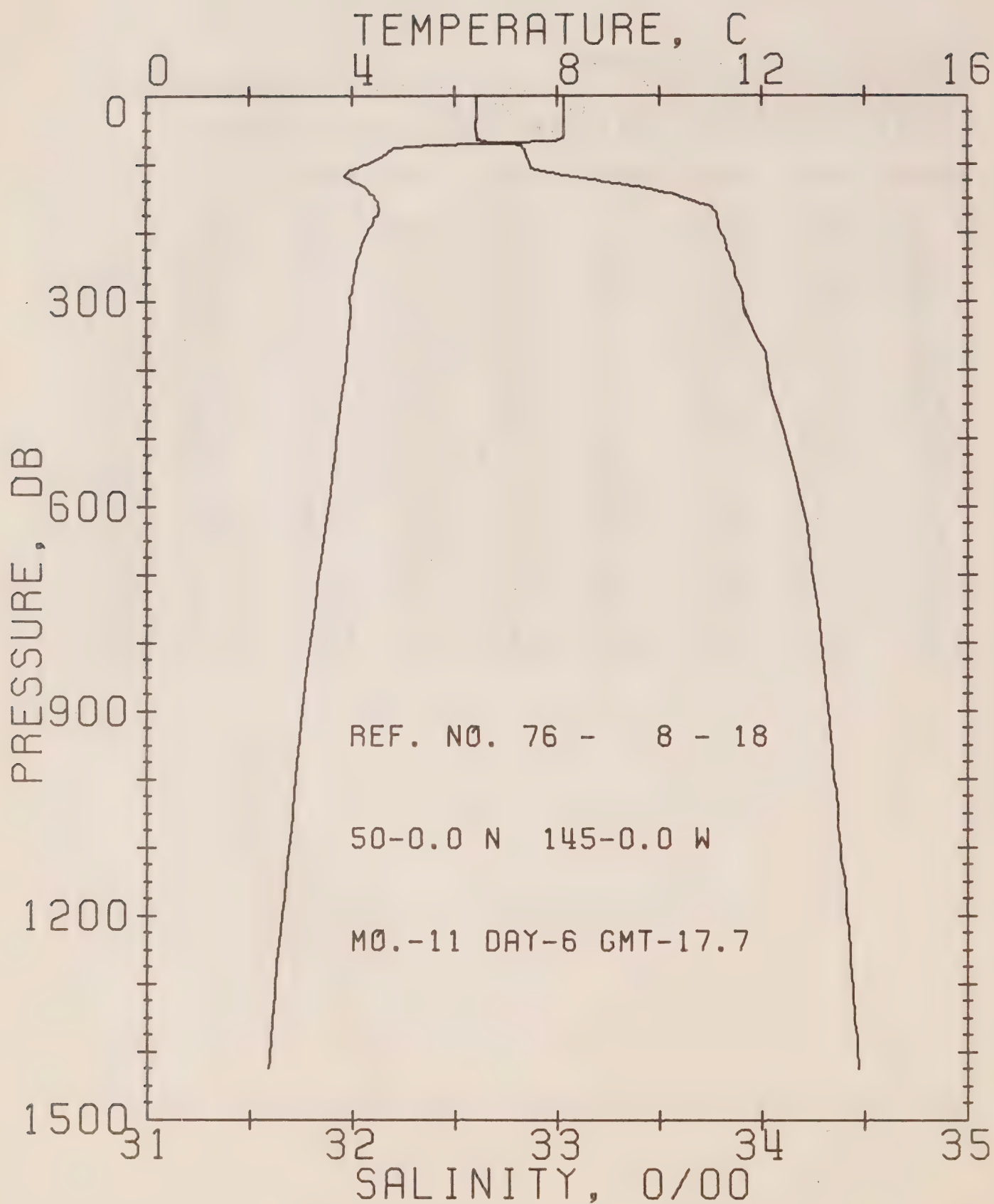
DATE 5/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.5

RESULTS OF STP CAST 121 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.26	32.61	0	25.39	260.0	0.0	0.0	1481.
10	8.26	32.61	10	25.39	260.4	0.26	0.01	1481.
20	8.26	32.61	20	25.39	260.6	0.52	0.05	1481.
30	8.26	32.61	30	25.39	260.7	0.78	0.12	1481.
50	8.17	32.61	50	25.40	259.8	1.30	0.33	1481.
75	5.02	32.83	75	25.98	204.5	1.90	0.71	1469.
100	4.16	32.84	99	26.08	194.6	2.40	1.15	1466.
125	4.40	33.33	124	26.44	160.8	2.85	1.67	1468.
150	4.90	33.70	149	26.68	138.9	3.22	2.19	1471.
175	4.66	33.74	174	26.74	133.5	3.56	2.75	1471.
200	4.44	33.76	199	26.78	129.5	3.89	3.38	1470.
225	4.28	33.79	223	26.82	126.2	4.21	4.07	1470.
250	4.17	33.80	248	26.84	124.0	4.52	4.83	1470.
300	4.07	33.86	298	26.90	119.2	5.13	6.53	1471.
400	3.93	33.99	397	27.02	108.7	6.27	10.58	1472.
500	3.75	34.09	496	27.11	100.6	7.31	15.37	1473.
600	3.58	34.15	595	27.18	94.7	8.29	20.82	1474.
800	3.22	34.26	793	27.30	84.5	10.08	33.56	1476.
1000	2.92	34.34	990	27.39	76.4	11.68	48.24	1478.
1200	2.67	34.40	1188	27.46	70.3	13.15	64.67	1480.



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REFERENCE NO. 76- 8- 18

DATE 6/11/76

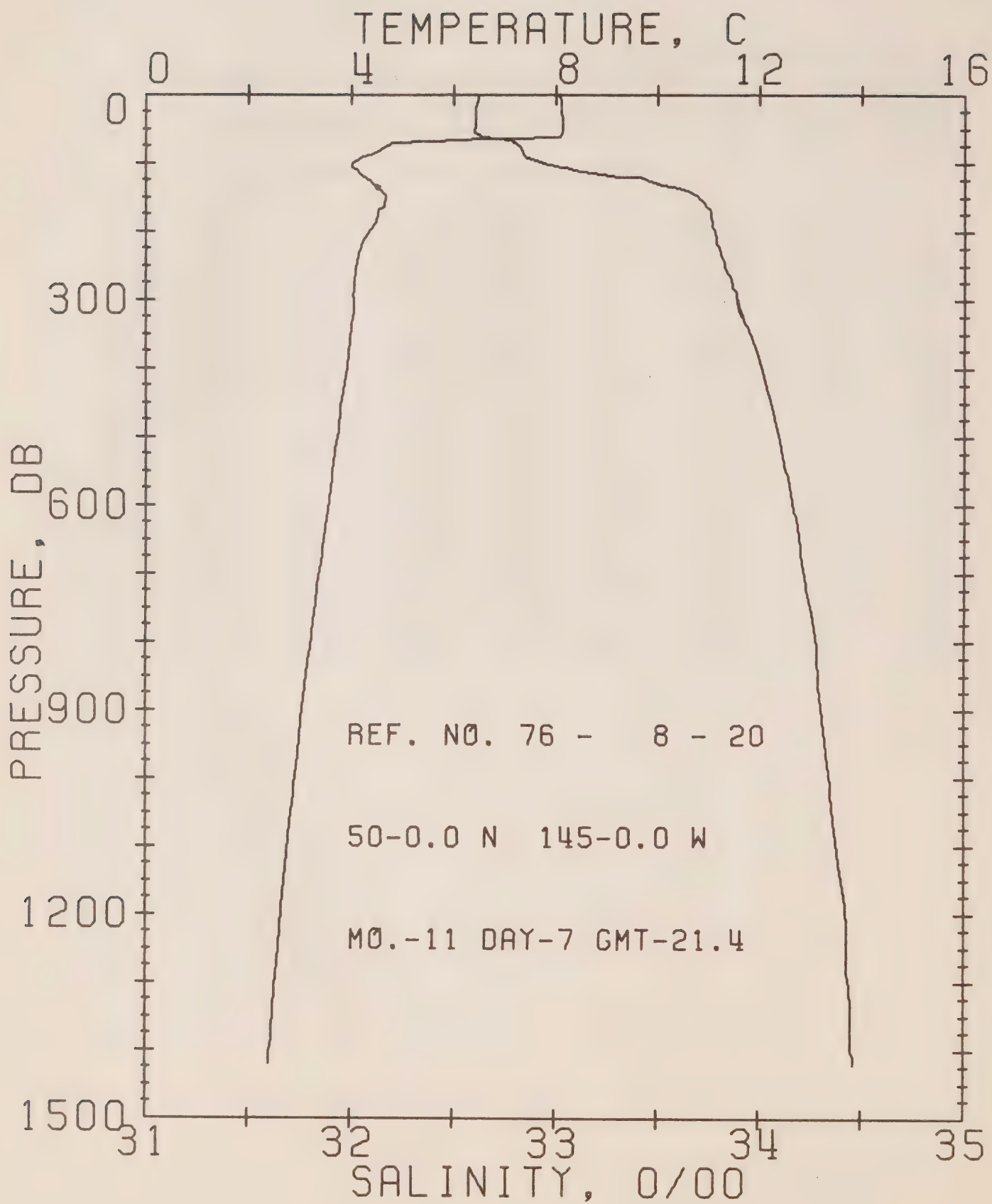
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 17.7

RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.13	32.61	0	25.40	258.2	0.0	0.0	1480.
10	8.13	32.61	10	25.40	258.6	0.26	0.01	1480.
20	8.13	32.61	20	25.40	258.8	0.52	0.05	1481.
30	8.13	32.61	30	25.40	258.9	0.78	0.12	1481.
50	8.13	32.60	50	25.40	259.9	1.29	0.33	1481.
75	4.84	32.83	75	26.00	202.5	1.91	0.72	1469.
100	4.27	32.86	99	26.08	194.7	2.41	1.16	1467.
125	4.03	33.22	124	26.39	165.4	2.86	1.66	1467.
150	4.46	33.63	149	26.67	139.1	3.24	2.21	1469.
175	4.49	33.78	174	26.79	128.5	3.57	2.76	1470.
200	4.30	33.80	199	26.83	125.1	3.89	3.36	1470.
225	4.16	33.83	223	26.86	121.7	4.20	4.03	1470.
250	4.07	33.86	248	26.90	118.4	4.50	4.76	1470.
300	3.96	33.91	298	26.95	114.3	5.08	6.38	1470.
400	3.86	34.03	397	27.05	105.2	6.17	10.28	1471.
500	3.70	34.11	496	27.14	97.9	7.19	14.95	1473.
600	3.52	34.20	595	27.22	90.7	8.13	20.22	1474.
800	3.17	34.29	793	27.33	81.3	9.85	32.42	1475.
1000	2.88	34.35	990	27.40	75.1	11.41	46.70	1476.
1200	2.62	34.41	1188	27.47	68.8	12.84	62.78	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 20

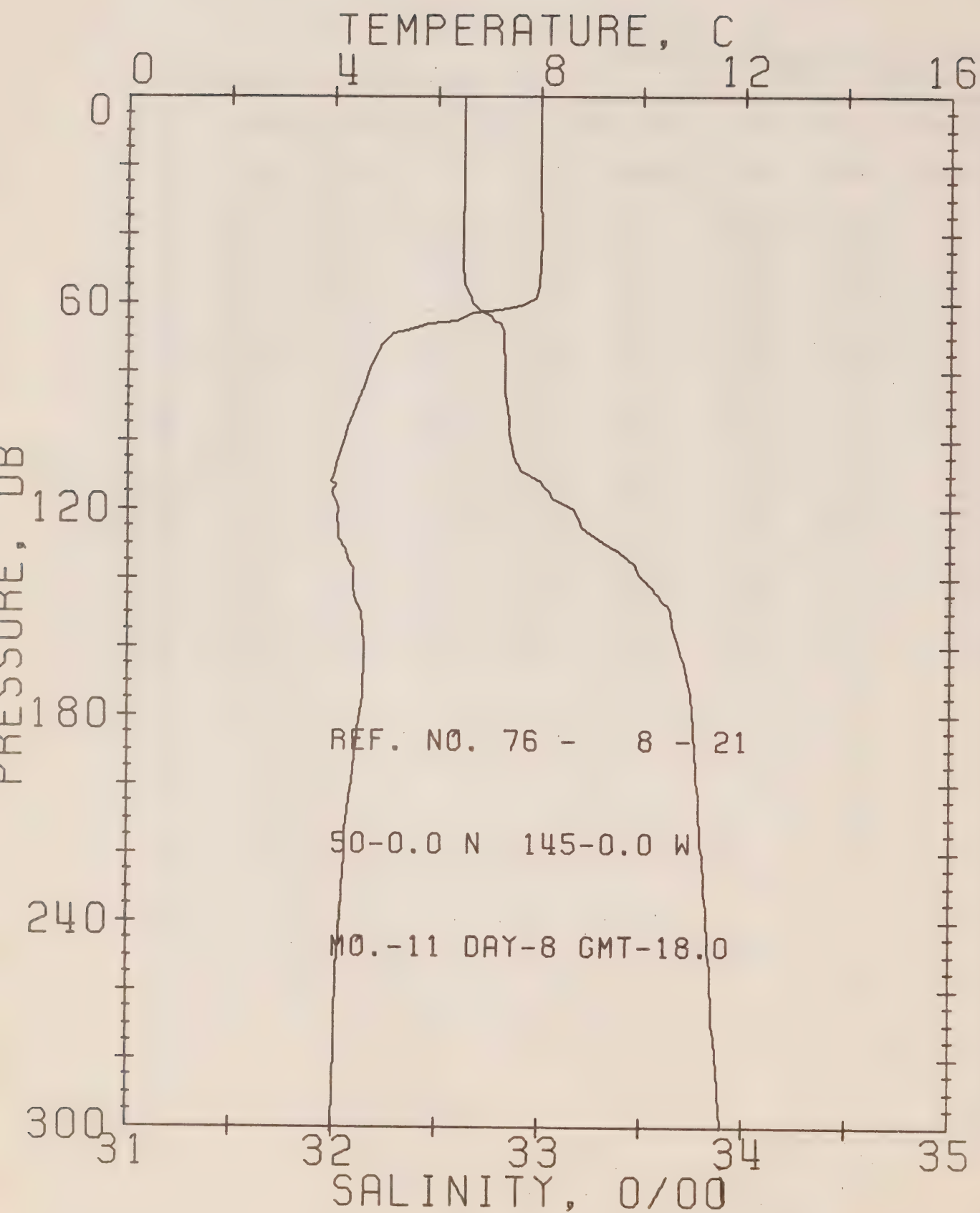
DATE 7/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.4

RESULTS OF STP CAST 134 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.08	32.62	0	25.42	256.8	0.0	0.0	1480.
10	8.11	32.62	10	25.41	257.7	0.26	0.01	1480.
20	8.11	32.61	20	25.41	258.4	0.52	0.05	1481.
30	8.12	32.61	30	25.41	258.7	0.77	0.12	1481.
50	8.12	32.60	50	25.40	259.5	1.29	0.33	1481.
75	4.67	32.82	75	26.01	201.5	1.89	0.71	1468.
100	4.03	32.93	99	26.16	187.0	2.38	1.14	1466.
125	4.37	33.46	124	26.55	150.8	2.80	1.53	1468.
150	4.67	33.70	149	26.71	136.0	3.16	2.13	1470.
175	4.50	33.76	174	26.77	130.1	3.49	2.68	1470.
200	4.33	33.78	199	26.81	127.1	3.81	3.29	1470.
225	4.17	33.80	223	26.84	124.0	4.13	3.97	1470.
250	4.09	33.83	248	26.87	121.2	4.44	4.71	1470.
300	4.03	33.89	298	26.93	116.5	5.03	5.38	1470.
400	3.90	34.01	397	27.04	106.9	6.14	10.34	1472.
500	3.73	34.10	496	27.12	99.6	7.17	15.06	1473.
600	3.56	34.17	595	27.19	93.5	8.14	20.45	1474.
800	3.20	34.28	793	27.31	82.7	9.90	32.99	1476.
1000	2.90	34.35	990	27.40	75.6	11.49	47.54	1478.
1200	2.63	34.42	1188	27.48	68.1	12.93	63.70	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 21

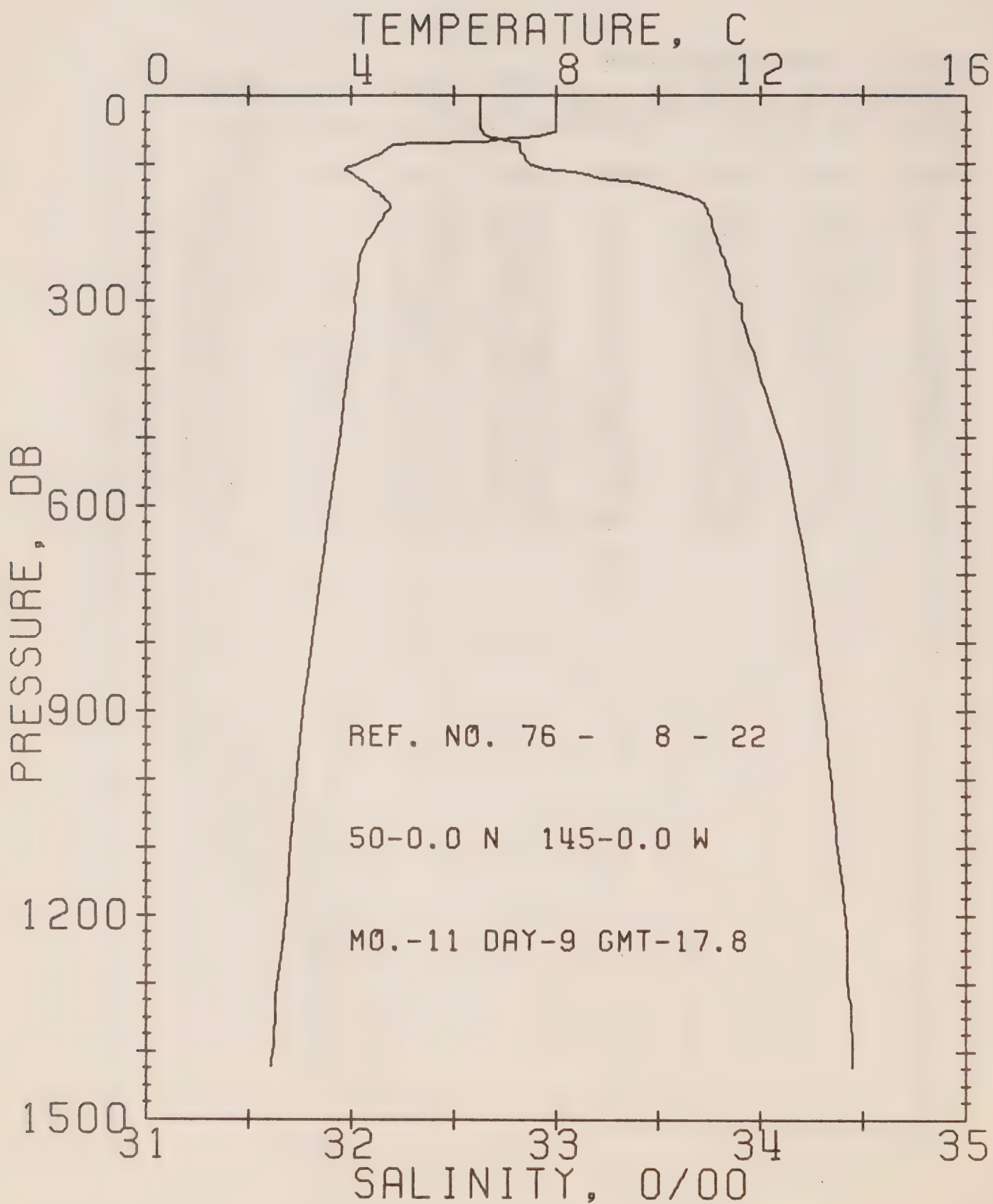
DATE 8/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 18.0

RESULTS OF STP CAST 92 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. CN	SOUND
0	8.01	32.63	0	25.44	255.1	0.0	0.0	1430.
10	8.01	32.63	10	25.44	255.4	0.26	0.01	1430.
20	8.01	32.63	20	25.44	255.6	0.51	0.05	1430.
30	8.01	32.63	30	25.44	255.9	0.77	0.12	1430.
50	8.00	32.62	50	25.43	256.5	1.28	0.33	1431.
75	4.79	32.82	75	26.00	202.4	1.86	0.69	1433.
100	4.16	32.86	99	26.09	193.8	2.36	1.13	1436.
125	4.07	33.20	124	26.37	167.3	2.81	1.55	1437.
150	4.53	33.64	149	26.67	139.2	3.19	2.18	1470.
175	4.54	33.74	174	26.75	131.9	3.53	2.74	1470.
200	4.33	33.77	199	26.80	127.6	3.35	3.36	1470.
225	4.19	33.80	223	26.84	123.9	4.16	4.04	1470.
250	4.08	33.83	248	26.87	120.9	4.47	4.73	1470.
300	3.97	33.89	298	26.93	115.7	5.06	5.44	1470.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 22

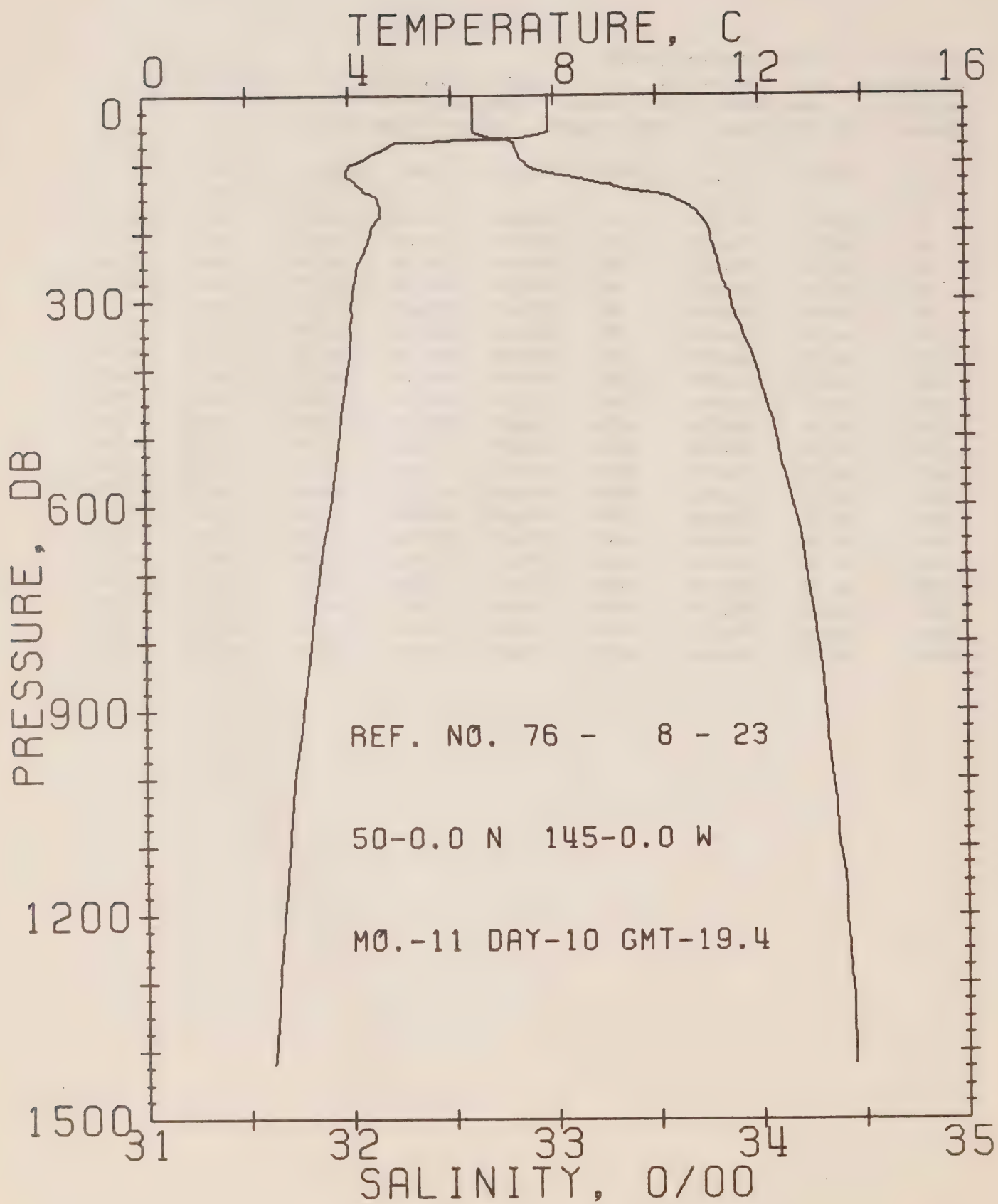
DATE 9/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.8

RESULTS OF STP CAST 124 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.01	32.63	0	25.44	255.1	0.0	0.0	1480.
10	8.01	32.63	10	25.44	255.4	0.26	0.01	1480.
20	8.01	32.63	20	25.44	255.6	0.51	0.05	1480.
30	8.01	32.63	30	25.44	255.7	0.77	0.12	1480.
50	8.00	32.63	50	25.44	255.9	1.28	0.33	1481.
75	4.75	32.82	75	26.00	202.3	1.87	0.70	1458.
100	4.13	32.87	99	26.11	192.5	2.36	1.14	1466.
125	4.21	33.30	124	26.44	161.4	2.81	1.65	1467.
150	4.65	33.66	149	26.68	138.9	3.18	2.16	1470.
175	4.64	33.74	174	26.74	133.0	3.51	2.72	1471.
200	4.42	33.77	199	26.79	128.8	3.64	3.35	1470.
225	4.20	33.80	223	26.84	124.5	4.16	4.03	1470.
250	4.13	33.83	248	26.87	121.7	4.47	4.78	1470.
300	4.06	33.88	298	26.91	117.5	5.06	6.45	1470.
400	3.94	33.99	397	27.01	109.0	6.20	10.49	1472.
500	3.76	34.09	496	27.11	100.3	7.24	15.29	1473.
600	3.57	34.17	595	27.19	93.4	8.21	20.68	1474.
800	3.22	34.27	793	27.31	83.3	9.97	33.21	1476.
1000	2.91	34.35	990	27.40	75.7	11.56	47.75	1478.
1200	2.71	34.41	1188	27.47	69.9	13.02	64.07	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 23

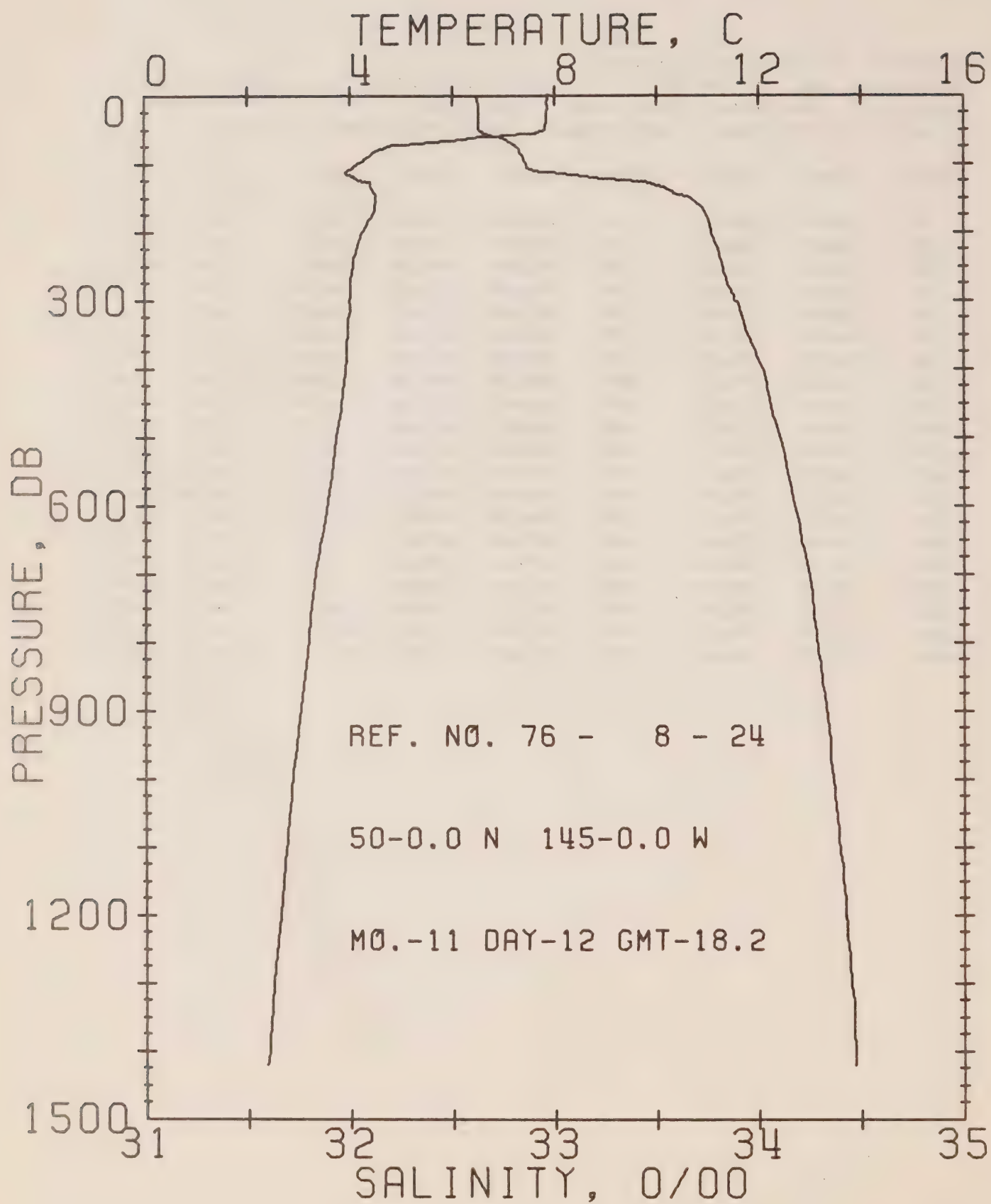
DATE 10/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.4

RESULTS OF STP CAST 128 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. LN	SOUND
0	7.90	32.61	0	25.44	255.1	0.0	0.0	1479.
10	7.90	32.61	10	25.44	255.4	0.26	0.01	1480.
20	7.90	32.61	20	25.44	255.6	0.51	0.05	1480.
30	7.89	32.61	30	25.44	255.5	0.77	0.12	1480.
50	7.90	32.61	50	25.44	256.0	1.28	0.33	1480.
75	4.75	32.81	75	25.99	203.1	1.86	0.69	1468.
100	4.07	32.86	99	26.10	192.6	2.36	1.13	1466.
125	4.12	33.17	124	26.35	169.6	2.81	1.66	1467.
150	4.55	33.58	149	26.63	143.9	3.20	2.20	1470.
175	4.63	33.71	174	26.72	135.2	3.55	2.74	1471.
200	4.43	33.76	199	26.78	129.6	3.88	3.41	1470.
225	4.30	33.78	223	26.81	126.8	4.20	4.11	1470.
250	4.15	33.80	248	26.85	123.7	4.52	4.86	1470.
300	4.02	33.86	298	26.90	118.7	5.12	6.56	1470.
400	3.94	33.99	397	27.01	109.3	6.26	10.63	1472.
500	3.76	34.08	496	27.11	100.8	7.31	15.43	1473.
600	3.59	34.16	595	27.18	94.2	8.29	20.90	1474.
800	3.20	34.28	793	27.31	82.7	10.05	33.39	1476.
1000	2.87	34.35	990	27.40	75.3	11.63	47.86	1478.
1200	2.65	34.41	1188	27.47	69.3	13.07	63.98	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 24

DATE 12/11/76

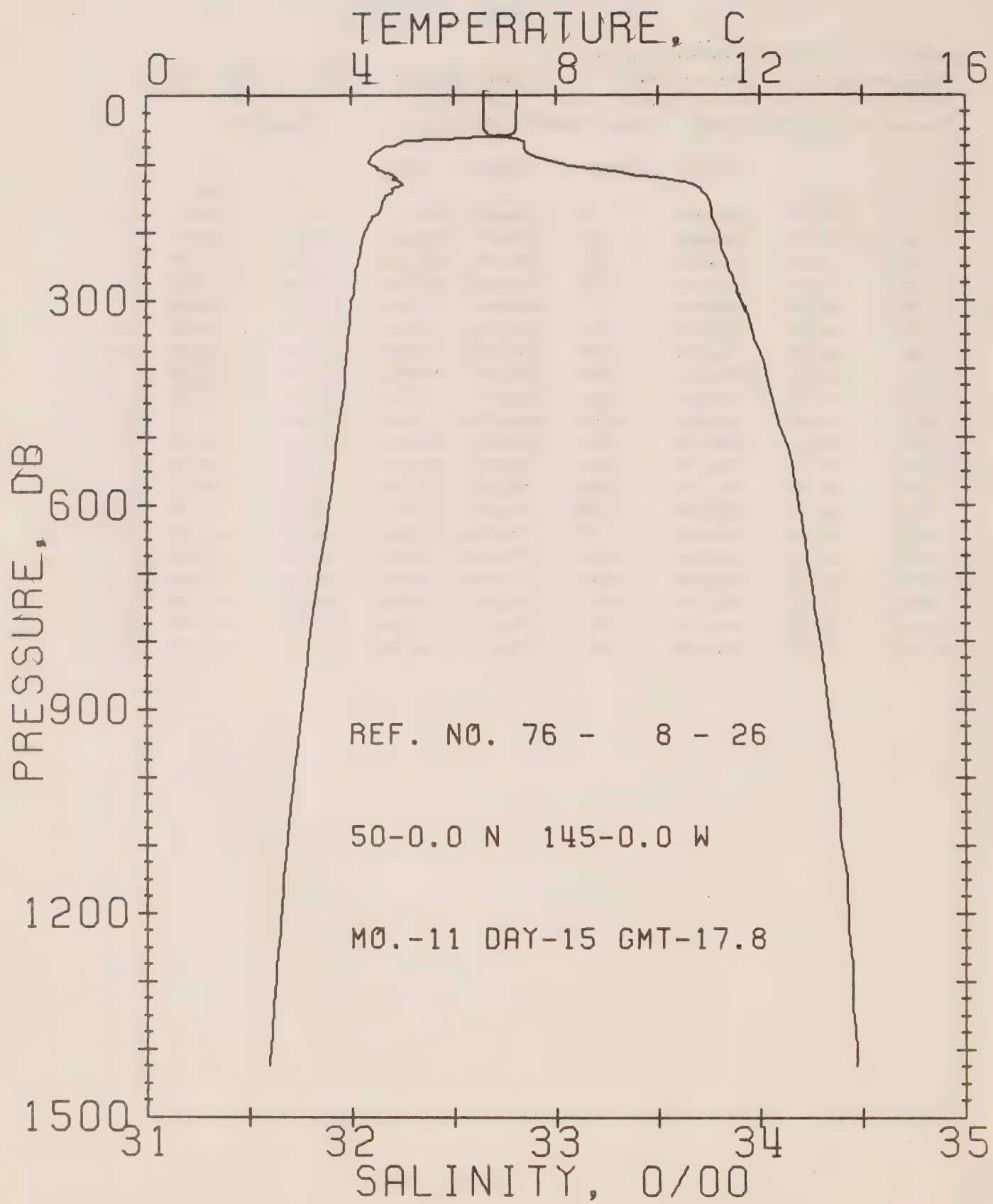
STATION P

POSITION 50- 0.0N, 145- 0.0W

GMT 18.2

RESULTS OF STP CAST 160 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA C	POT. EN	SOUND
0	7.87	32.63	0	25.46	253.2	0.0	0.0	1479.
10	7.85	32.62	10	25.45	254.0	0.25	0.01	1479.
20	7.86	32.63	20	25.46	253.5	0.51	0.05	1480.
30	7.85	32.63	30	25.46	253.5	0.76	0.12	1480.
50	7.80	32.63	50	25.47	253.2	1.27	0.32	1480.
75	4.71	32.81	75	26.00	202.5	1.84	0.68	1468.
100	4.16	32.86	99	26.09	193.7	2.33	1.12	1465.
125	4.21	33.38	124	26.50	155.2	2.79	1.64	1468.
150	4.50	33.66	149	26.70	137.2	3.15	2.15	1470.
175	4.45	33.74	174	26.76	131.2	3.48	2.70	1470.
200	4.23	33.77	199	26.81	126.8	3.80	3.32	1469.
225	4.10	33.80	223	26.85	123.5	4.12	3.99	1469.
250	4.04	33.82	248	26.87	121.2	4.42	4.73	1470.
300	3.98	33.88	298	26.92	116.8	5.02	6.40	1470.
400	3.90	34.02	397	27.04	106.3	6.13	10.37	1472.
500	3.71	34.10	496	27.13	99.0	7.16	15.09	1473.
600	3.53	34.18	595	27.20	92.3	8.12	20.44	1474.
800	3.17	34.28	793	27.32	81.8	9.85	32.71	1475.
1000	2.85	34.36	990	27.41	73.8	11.40	46.92	1478.
1200	2.61	34.42	1188	27.48	68.0	12.81	62.76	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 26

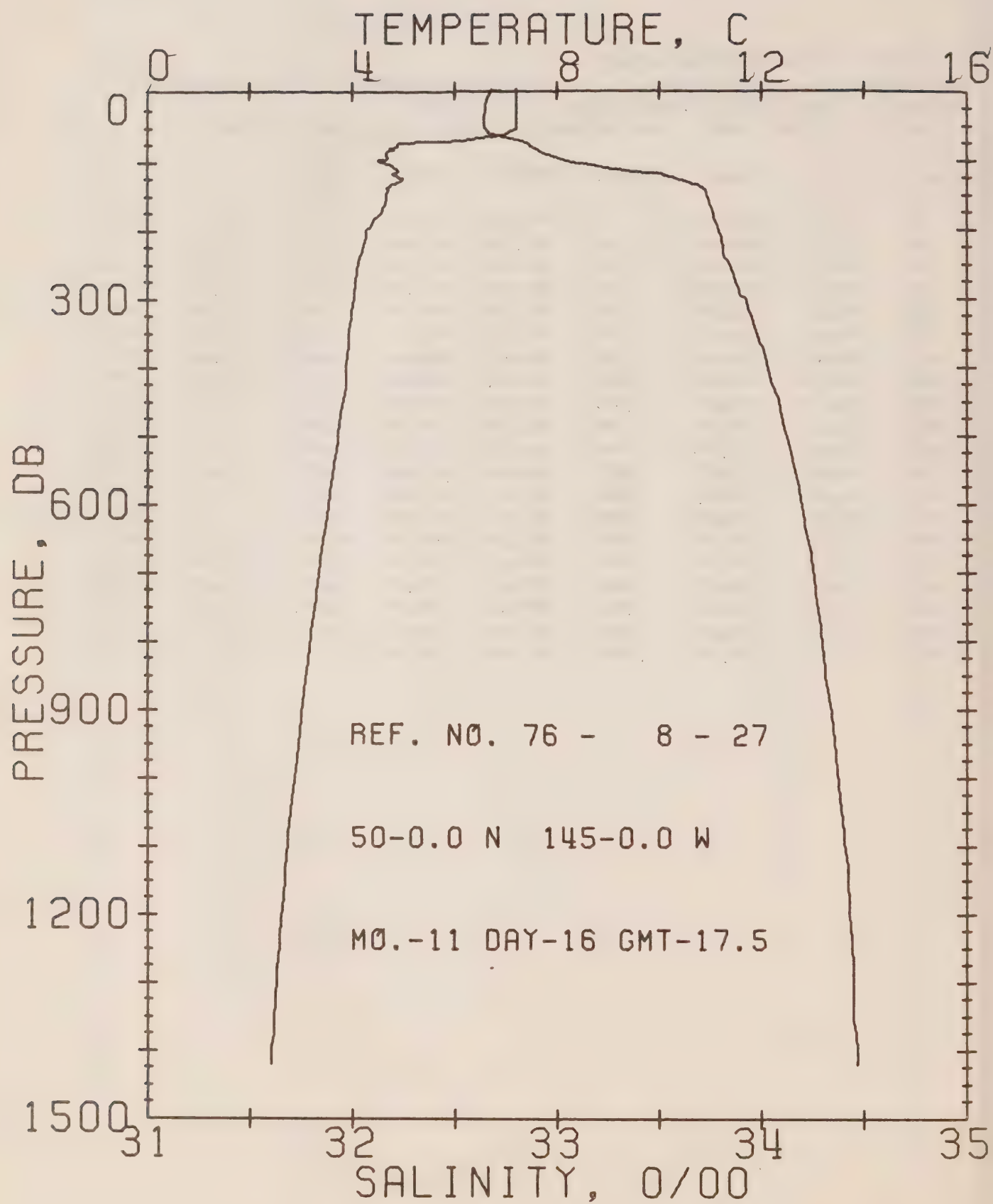
DATE 15/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.8

RESULTS OF STP CAST 144 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.24	32.65	0	25.56	243.3	0.0	0.0	1477.
10	7.24	32.65	10	25.56	243.6	0.24	0.01	1477.
20	7.24	32.65	20	25.56	243.8	0.49	0.05	1477.
30	7.23	32.65	30	25.56	243.8	0.73	0.11	1477.
50	7.22	32.65	50	25.56	244.0	1.22	0.31	1478.
75	4.99	32.85	75	26.00	202.7	1.80	0.88	1469.
100	4.34	32.95	99	26.15	188.5	2.29	1.12	1467.
125	4.86	33.39	124	26.44	161.4	2.73	1.62	1470.
150	4.68	33.71	149	26.71	135.5	3.10	2.13	1470.
175	4.54	33.75	174	26.76	130.9	3.43	2.68	1470.
200	4.29	33.78	199	26.81	126.9	3.75	3.29	1470.
225	4.20	33.81	223	26.84	123.6	4.06	3.97	1470.
250	4.12	33.83	248	26.87	121.4	4.37	4.71	1470.
300	4.02	33.89	298	26.93	116.4	4.96	6.38	1470.
400	3.89	34.01	397	27.04	106.5	6.07	10.33	1472.
500	3.71	34.10	496	27.13	98.8	7.10	15.04	1473.
600	3.55	34.18	595	27.21	91.9	8.05	20.35	1474.
800	3.16	34.29	793	27.33	81.4	9.78	32.65	1475.
1000	2.85	34.37	990	27.42	73.1	11.32	46.79	1477.
1200	2.60	34.43	1188	27.49	67.4	12.72	62.49	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 27

DATE 16/11/76

STATION P

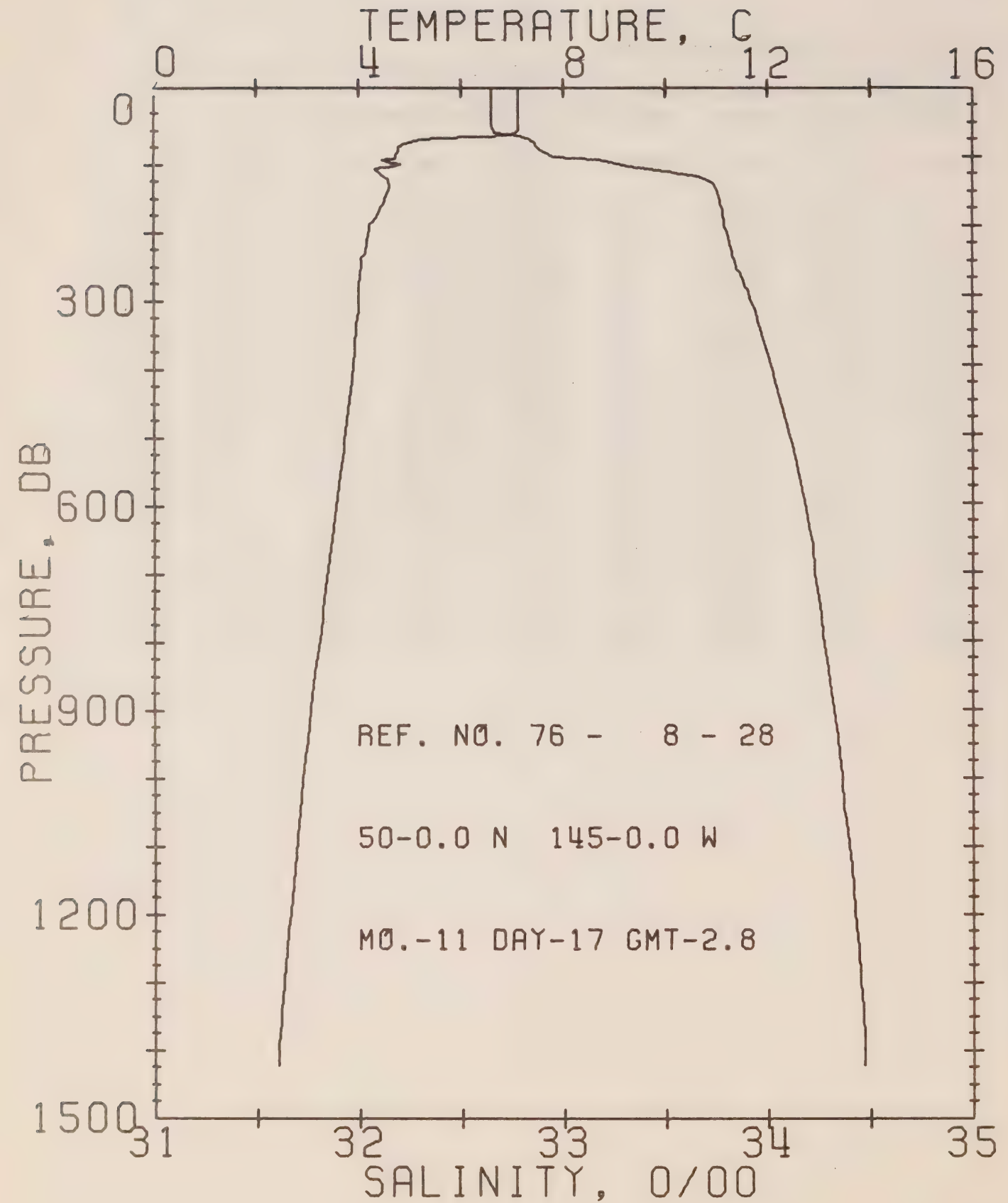
POSITION 50- 0.0N, 145- 0.0W

GMT 17.5

RESULTS OF STP CAST

148 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	7.21	32.68	0	25.59	240.6	0.0	0.0	1477.
10	7.21	32.66	10	25.57	242.4	0.24	0.01	1477.
20	7.20	32.65	20	25.57	243.1	0.48	0.05	1477.
30	7.20	32.65	30	25.57	243.3	0.73	0.11	1477.
50	7.21	32.64	50	25.56	244.5	1.22	0.31	1478.
75	5.76	32.85	75	25.91	211.2	1.81	0.69	1472.
100	4.69	33.00	99	26.15	188.4	2.30	1.12	1459.
125	4.37	33.52	124	26.54	151.6	2.73	1.62	1471.
150	4.66	33.72	149	26.73	134.4	3.09	2.11	1470.
175	4.57	33.75	174	26.75	131.8	3.42	2.67	1470.
200	4.33	33.78	199	26.81	127.0	3.74	3.28	1470.
225	4.21	33.80	223	26.84	124.4	4.06	3.96	1470.
250	4.10	33.82	248	26.87	121.7	4.37	4.71	1470.
300	4.02	33.89	298	26.93	116.4	4.96	6.37	1470.
400	3.88	34.02	397	27.04	106.1	6.06	10.30	1472.
500	3.71	34.11	496	27.13	98.2	7.08	14.98	1473.
600	3.52	34.19	595	27.21	91.2	8.03	20.26	1474.
800	3.16	34.29	793	27.33	81.0	9.74	32.46	1475.
1000	2.85	34.37	990	27.42	73.3	11.28	46.57	1478.
1200	2.60	34.43	1188	27.49	67.3	12.68	62.23	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 28

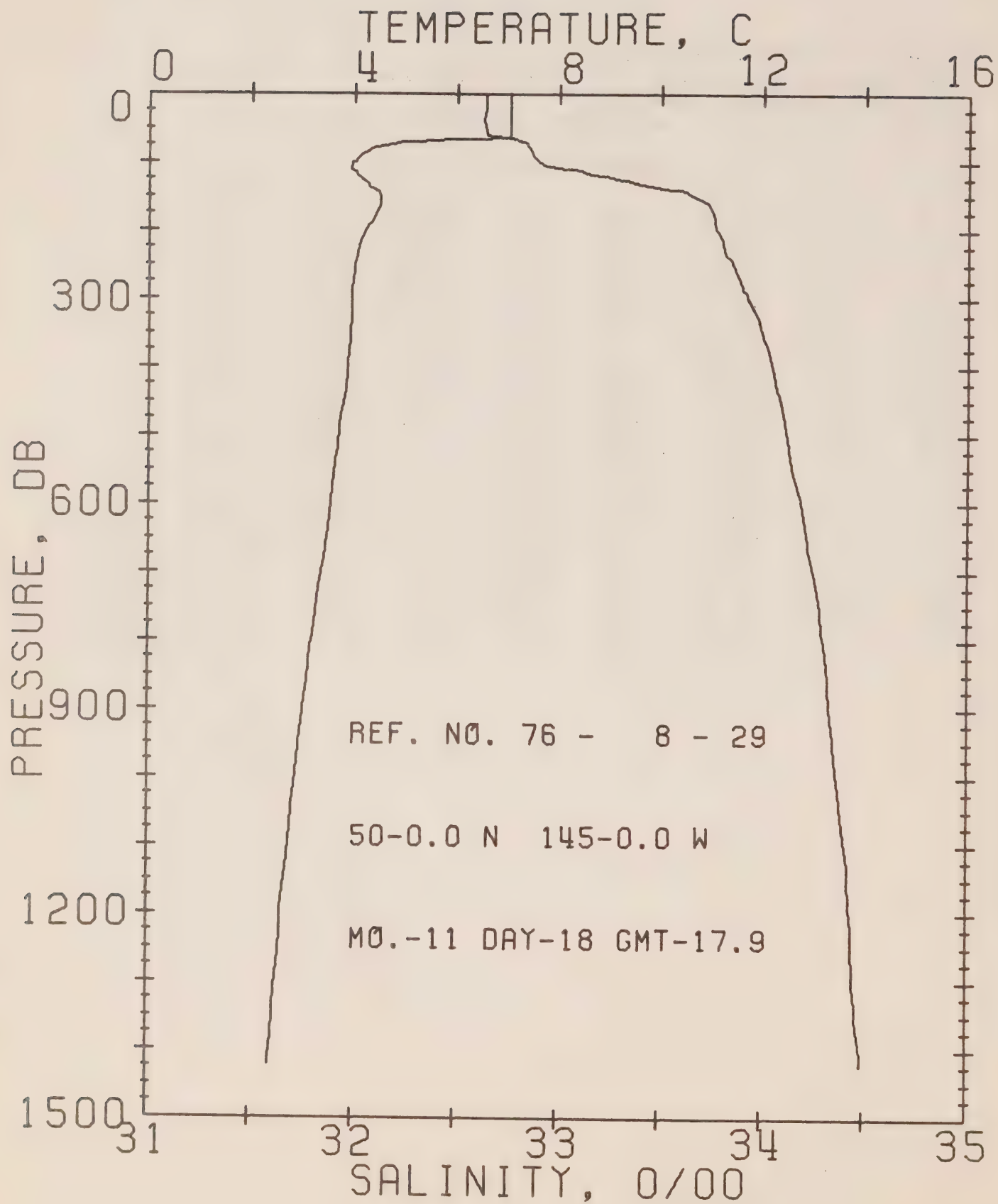
DATE 17/11/76

STATION P

POSITION 50- 0.0N, 146- 0.0W GMT 2.8

RESULTS OF STP CAST 124 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.13	32.65	0	25.58	241.8	0.0	0.0	1476.
10	7.13	32.65	10	25.58	242.2	0.24	0.01	1477.
20	7.12	32.65	20	25.58	242.2	0.48	0.05	1477.
30	7.12	32.65	30	25.58	242.4	0.73	0.11	1477.
50	7.12	32.65	50	25.58	242.6	1.21	0.31	1477.
75	5.15	32.84	75	25.97	205.1	1.80	0.68	1470.
100	4.72	32.95	99	26.11	192.5	2.29	1.12	1469.
125	4.44	33.55	124	26.62	144.5	2.71	1.59	1469.
150	4.57	33.74	149	26.75	131.7	3.04	2.07	1470.
175	4.41	33.77	174	26.79	128.1	3.37	2.60	1470.
200	4.21	33.79	199	26.83	125.1	3.69	3.21	1469.
225	4.15	33.81	223	26.85	123.0	4.00	3.88	1470.
250	4.06	33.84	248	26.88	120.4	4.30	4.62	1470.
300	3.99	33.91	298	26.95	114.6	4.89	6.20	1470.
400	3.89	34.01	397	27.04	106.7	6.00	10.21	1472.
500	3.73	34.10	496	27.13	99.0	7.03	14.32	1473.
600	3.55	34.18	595	27.20	92.3	7.98	20.27	1474.
800	3.21	34.27	793	27.31	83.1	9.73	32.71	1476.
1000	2.88	34.36	990	27.41	74.3	11.30	47.07	1478.
1200	2.63	34.42	1188	27.48	68.1	12.72	62.99	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 29

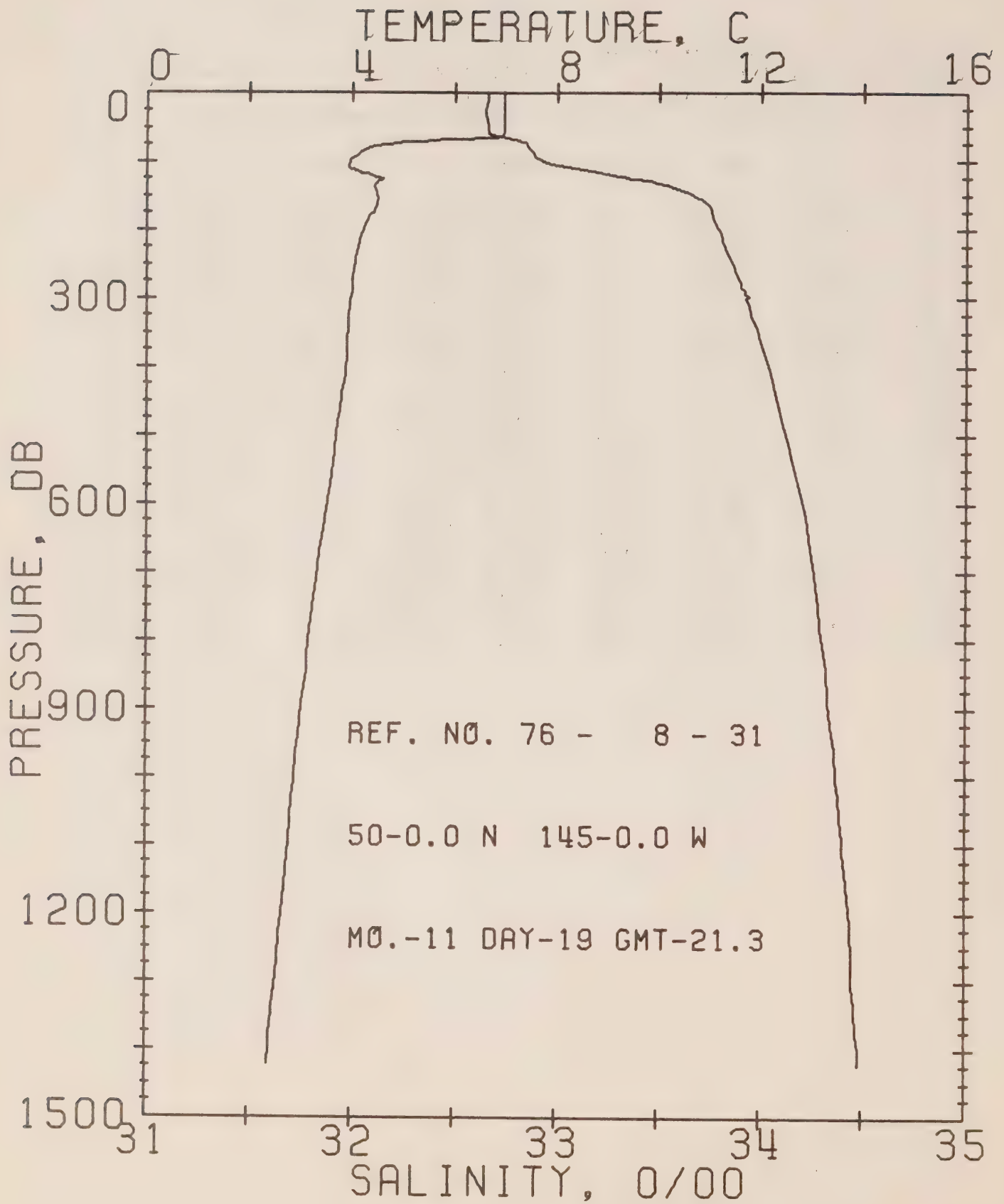
DATE 18/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.9

RESULTS OF STP CAST 128 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.03	32.64	0	25.58	241.3	0.0	0.0	1476.
10	7.03	32.64	10	25.58	241.6	0.24	0.01	1476.
20	7.03	32.64	20	25.58	241.8	0.48	0.05	1476.
30	7.03	32.64	30	25.58	242.2	0.73	0.11	1477.
50	7.04	32.64	50	25.58	242.5	1.21	0.31	1477.
75	4.60	32.84	75	26.03	199.2	1.76	0.67	1468.
100	3.99	32.90	99	26.14	183.9	2.27	1.10	1466.
125	4.14	33.31	124	26.45	159.7	2.70	1.60	1467.
150	4.50	33.66	149	26.69	137.4	3.07	2.12	1470.
175	4.41	33.75	174	26.77	129.9	3.40	2.67	1470.
200	4.21	33.77	199	26.81	126.3	3.72	3.28	1469.
225	4.08	33.81	223	26.85	122.7	4.04	3.95	1469.
250	4.01	33.85	248	26.90	118.6	4.34	4.68	1469.
300	3.95	33.93	298	26.97	112.7	4.92	6.30	1470.
400	3.87	34.05	397	27.07	103.8	5.99	10.14	1472.
500	3.70	34.12	496	27.14	97.4	7.00	14.75	1473.
600	3.54	34.19	595	27.21	91.2	7.95	20.05	1474.
800	3.17	34.30	793	27.33	81.0	9.67	32.29	1475.
1000	2.86	34.36	990	27.41	73.9	11.21	46.45	1476.
1200	2.59	34.43	1188	27.49	67.0	12.62	62.16	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 31

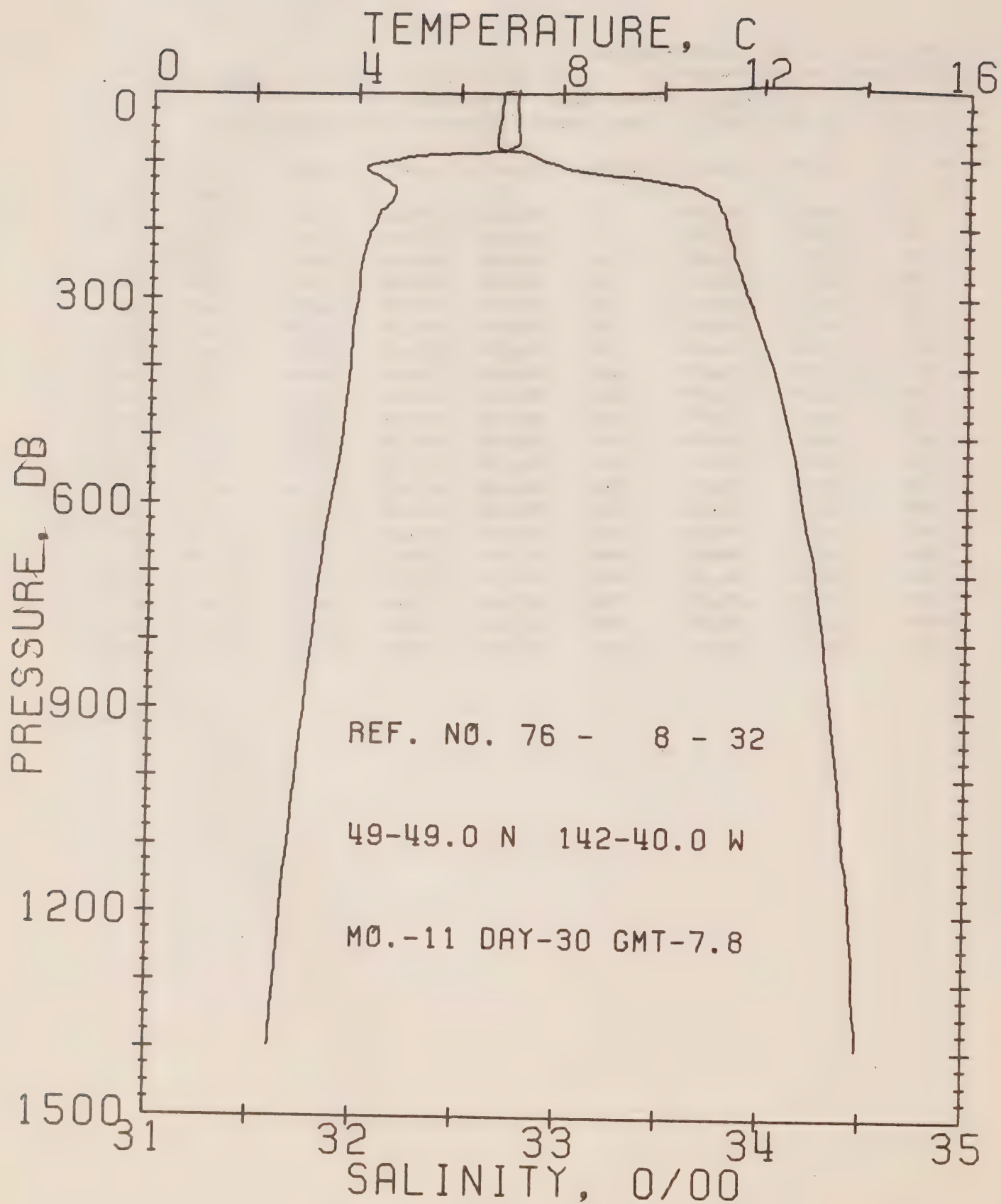
DATE 19/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 21.3

RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	6.97	32.66	0	25.61	239.0	0.0	0.0	1476.
10	6.97	32.66	10	25.61	239.4	0.24	0.01	1476.
20	6.96	32.65	20	25.60	239.8	0.48	0.05	1476.
30	6.96	32.65	30	25.60	240.2	0.72	0.11	1476.
50	6.95	32.66	50	25.61	239.7	1.20	0.31	1477.
75	4.72	32.85	75	26.03	199.8	1.77	0.67	1468.
100	3.95	32.93	99	26.17	186.3	2.25	1.10	1465.
125	4.62	33.37	124	26.45	160.2	2.69	1.59	1469.
150	4.50	33.67	149	26.70	136.5	3.05	2.10	1470.
175	4.41	33.75	174	26.78	129.8	3.38	2.65	1470.
200	4.20	33.79	199	26.83	124.9	3.70	3.26	1469.
225	4.10	33.82	223	26.86	122.0	4.01	3.92	1469.
250	4.04	33.86	248	26.90	118.5	4.31	4.65	1470.
300	3.94	33.92	298	26.96	113.3	4.89	6.27	1470.
400	3.87	34.04	397	27.06	104.5	5.97	10.14	1472.
500	3.69	34.12	496	27.14	97.3	6.98	14.77	1473.
600	3.50	34.20	595	27.23	89.9	7.92	20.01	1473.
800	3.16	34.30	793	27.34	80.5	9.62	32.05	1475.
1000	2.87	34.37	990	27.42	73.6	11.15	46.16	1478.
1200	2.63	34.43	1188	27.49	67.3	12.56	61.96	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 32

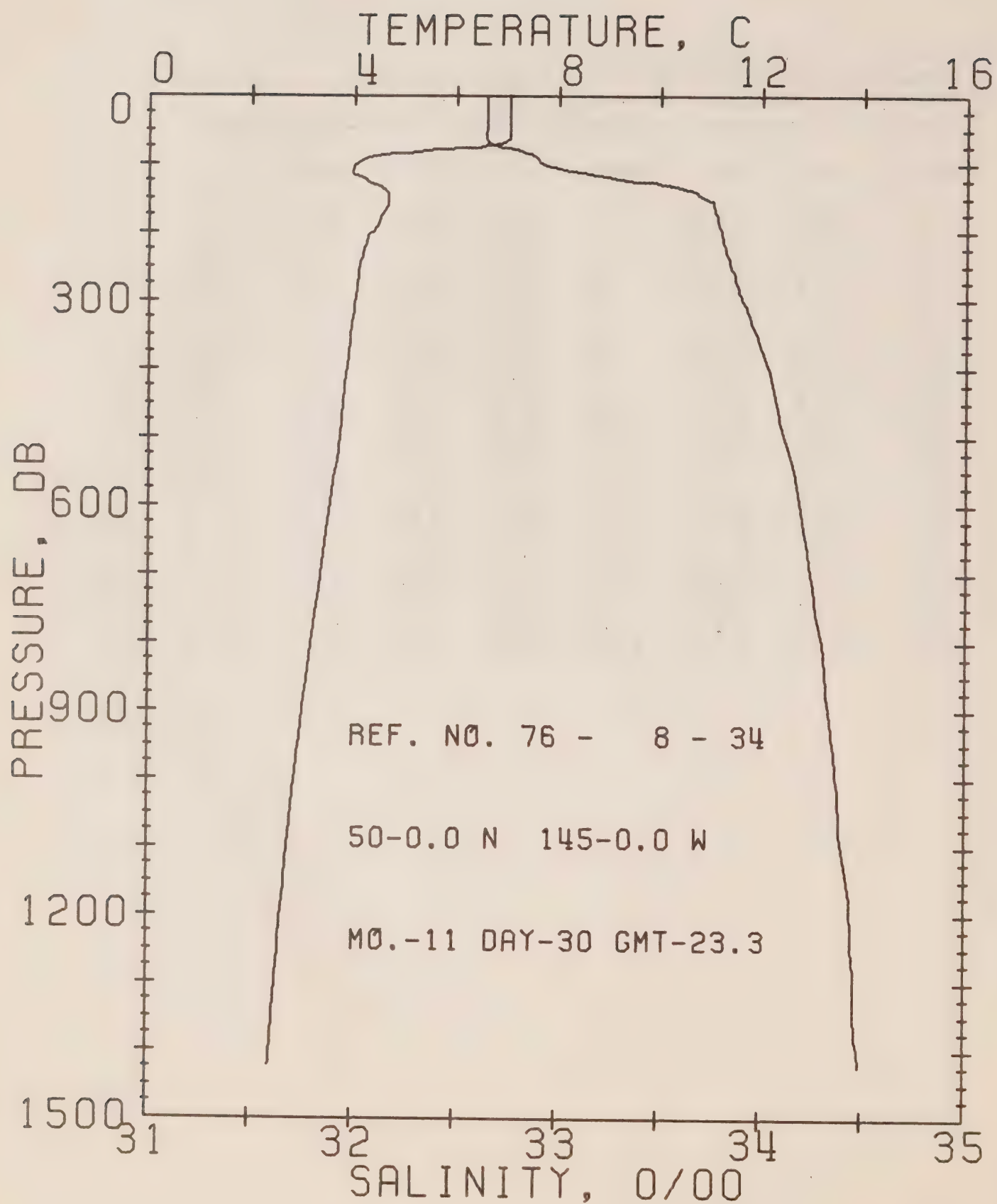
DATE 30/11/76

STATION 12

POSITION 49-49.0N, 142-40.0W GMT 7.8

RESULTS OF STP CAST 113 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.14	32.72	0	25.63	236.7	0.0	0.0	1477.
10	7.13	32.71	10	25.62	237.7	0.24	0.01	1477.
20	7.13	32.70	20	25.62	238.2	0.48	0.05	1477.
30	7.13	32.70	30	25.62	238.7	0.71	0.11	1477.
50	7.15	32.69	50	25.61	239.8	1.19	0.30	1477.
75	7.16	32.68	75	25.60	241.2	1.79	0.69	1478.
100	4.76	32.89	99	26.06	197.4	2.36	1.19	1469.
125	4.43	33.23	124	26.36	168.4	2.81	1.71	1468.
150	4.74	33.72	149	26.72	135.1	3.18	2.23	1471.
175	4.46	33.79	174	26.80	127.6	3.51	2.77	1470.
200	4.32	33.82	199	26.84	123.9	3.82	3.37	1470.
225	4.16	33.85	223	26.88	120.5	4.13	4.03	1470.
250	4.07	33.87	248	26.90	118.3	4.43	4.75	1470.
300	4.02	33.92	298	26.95	114.2	5.01	6.38	1470.
400	3.39	34.05	397	27.06	104.2	6.09	10.24	1472.
500	3.74	34.13	496	27.15	96.9	7.10	14.84	1473.
600	3.53	34.20	595	27.22	90.8	8.04	20.09	1474.
800	3.18	34.30	793	27.34	80.5	9.74	32.20	1476.
1000	2.88	34.38	990	27.42	73.0	11.27	46.24	1478.
1200	2.62	34.44	1188	27.50	66.3	12.66	61.83	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 34

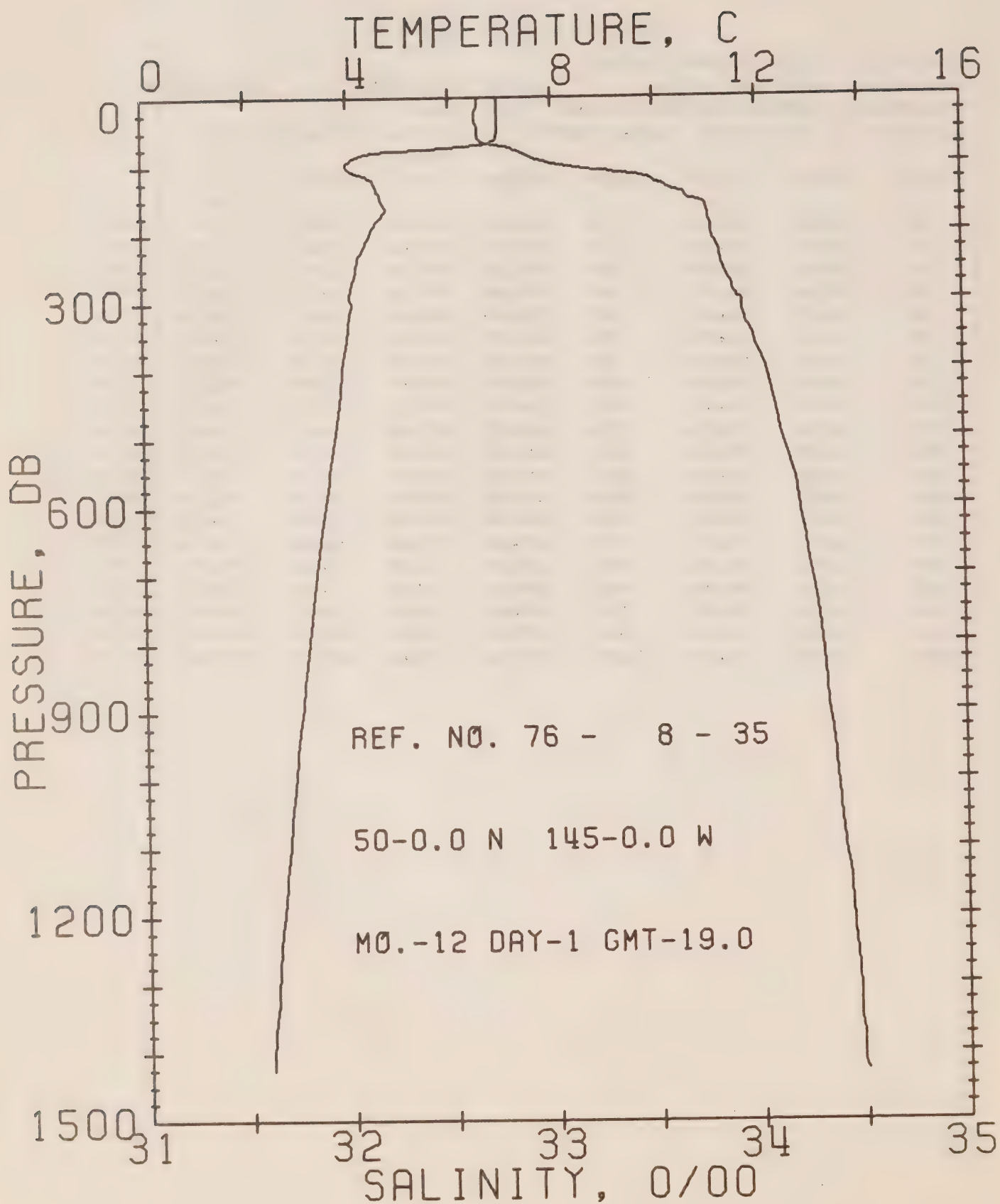
DATE 30/11/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 23.3

RESULTS OF STP CAST 131 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.05	32.65	0	25.59	240.8	0.0	0.0	1476.
10	7.05	32.65	10	25.59	241.2	0.24	0.01	1476.
20	7.05	32.65	20	25.59	241.2	0.48	0.05	1476.
30	7.04	32.65	30	25.59	241.2	0.72	0.11	1477.
50	7.05	32.65	50	25.59	241.8	1.21	0.31	1477.
75	6.43	32.72	75	25.72	229.0	1.81	0.59	1475.
100	4.03	32.93	99	26.16	187.0	2.31	1.13	1466.
125	4.26	33.38	124	26.50	155.7	2.74	1.63	1468.
150	4.66	33.71	149	26.72	135.1	3.10	2.13	1470.
175	4.54	33.78	174	26.78	129.3	3.42	2.67	1470.
200	4.34	33.80	199	26.82	125.6	3.74	3.28	1470.
225	4.19	33.82	223	26.85	122.8	4.05	3.95	1470.
250	4.09	33.84	248	26.88	120.1	4.36	4.69	1470.
300	4.01	33.90	298	26.94	115.5	4.95	6.33	1470.
400	3.86	34.03	397	27.06	104.8	6.04	10.24	1471.
500	3.72	34.11	496	27.14	98.1	7.06	14.89	1473.
600	3.54	34.19	595	27.22	91.1	8.00	20.17	1474.
800	3.19	34.30	793	27.33	80.9	9.73	32.45	1476.
1000	2.86	34.37	990	27.42	73.3	11.27	46.57	1478.
1200	2.60	34.44	1188	27.50	66.3	12.67	62.22	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 35

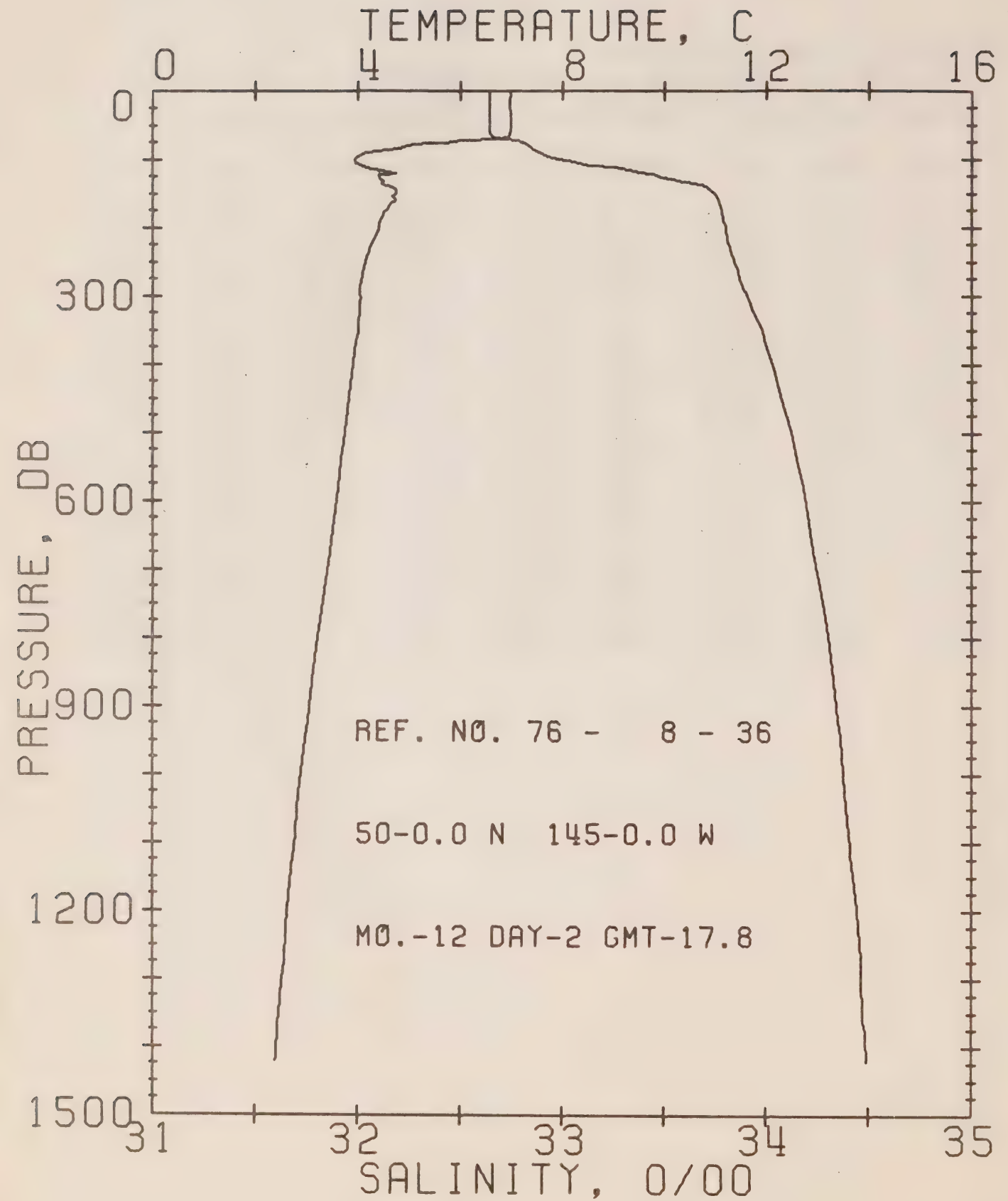
DATE 1/12/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 19.0

RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	6.92	32.65	0	25.61	239.2	0.0	0.0	1476.
10	6.95	32.64	10	25.59	240.7	0.24	0.01	1476.
20	6.96	32.63	20	25.59	241.3	0.48	0.05	1476.
30	6.96	32.63	30	25.58	241.8	0.72	0.11	1476.
50	6.95	32.64	50	25.59	241.1	1.21	0.31	1477.
75	5.73	32.80	75	25.88	214.3	1.80	0.55	1472.
100	3.98	33.03	99	26.25	179.2	2.25	1.11	1466.
125	4.53	33.51	124	26.57	148.7	2.63	1.57	1469.
150	4.67	33.67	149	26.68	138.6	3.04	2.07	1470.
175	4.65	33.77	174	26.76	131.2	3.37	2.62	1471.
200	4.43	33.78	199	26.80	128.0	3.69	3.24	1470.
225	4.27	33.82	223	26.84	123.9	4.01	3.92	1470.
250	4.16	33.83	248	26.87	121.6	4.31	4.65	1470.
300	4.06	33.93	298	26.96	113.5	4.90	6.32	1471.
400	3.88	34.04	397	27.06	104.5	6.00	10.23	1472.
500	3.72	34.12	496	27.14	97.7	7.01	14.86	1473.
600	3.50	34.20	595	27.22	90.2	7.95	20.09	1473.
800	3.16	34.30	793	27.34	80.4	9.65	32.20	1475.
1000	2.87	34.37	990	27.42	73.5	11.19	46.29	1478.
1200	2.60	34.44	1186	27.50	66.6	12.59	61.95	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 36

DATE 2/12/76

STATION P

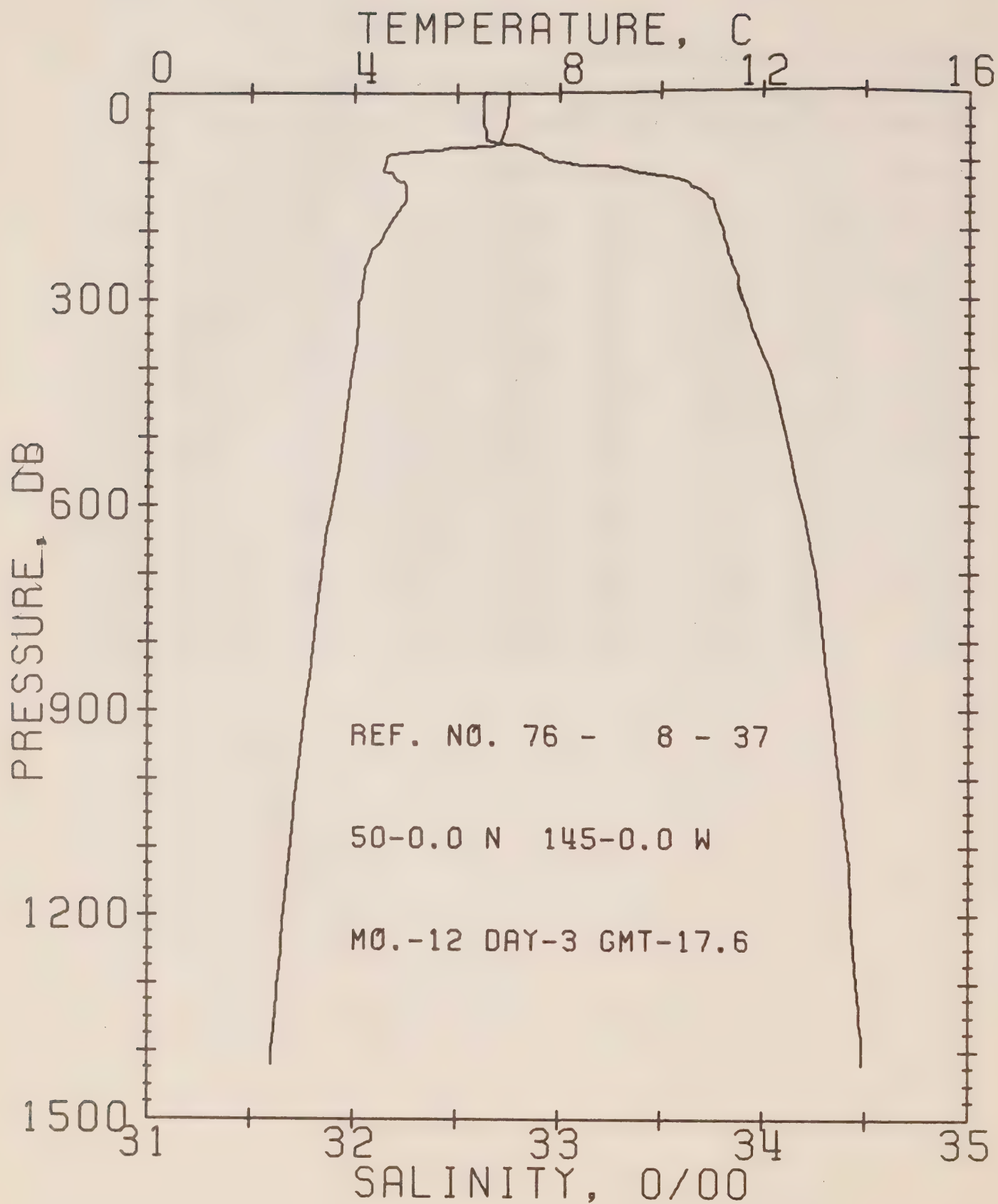
POSITION 50- 0.0N, 145- 0.0W

GMT 17.8

RESULTS OF STP CAST

114 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	6.97	32.64	0	25.59	240.5	0.0	0.0	1476.
10	6.97	32.64	10	25.59	240.9	0.24	0.01	1476.
20	6.97	32.64	20	25.59	241.0	0.48	0.05	1476.
30	6.98	32.64	30	25.59	241.2	0.72	0.11	1476.
50	6.98	32.64	50	25.59	241.5	1.21	0.31	1477.
75	5.76	32.80	75	25.87	215.0	1.80	0.58	1472.
100	3.92	32.98	99	26.21	182.2	2.29	1.12	1465.
125	4.41	33.46	124	26.54	151.2	2.71	1.60	1469.
150	4.75	33.74	149	26.73	134.0	3.06	2.09	1471.
175	4.54	33.78	174	26.78	129.1	3.39	2.63	1470.
200	4.39	33.80	199	26.82	126.2	3.71	3.24	1470.
225	4.26	33.81	223	26.84	123.9	4.02	3.92	1470.
250	4.13	33.84	248	26.88	120.8	4.32	4.65	1470.
300	4.04	33.94	298	26.96	112.8	4.92	6.31	1470.
400	3.90	34.03	397	27.05	105.6	6.02	10.24	1472.
500	3.73	34.12	496	27.14	97.7	7.04	14.90	1473.
600	3.56	34.19	595	27.21	91.5	7.98	20.18	1474.
800	3.20	34.30	793	27.33	80.9	9.70	32.44	1476.
1000	2.88	34.37	990	27.42	73.3	11.24	46.51	1478.
1200	2.62	34.44	1188	27.50	66.6	12.64	62.19	1430.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 37

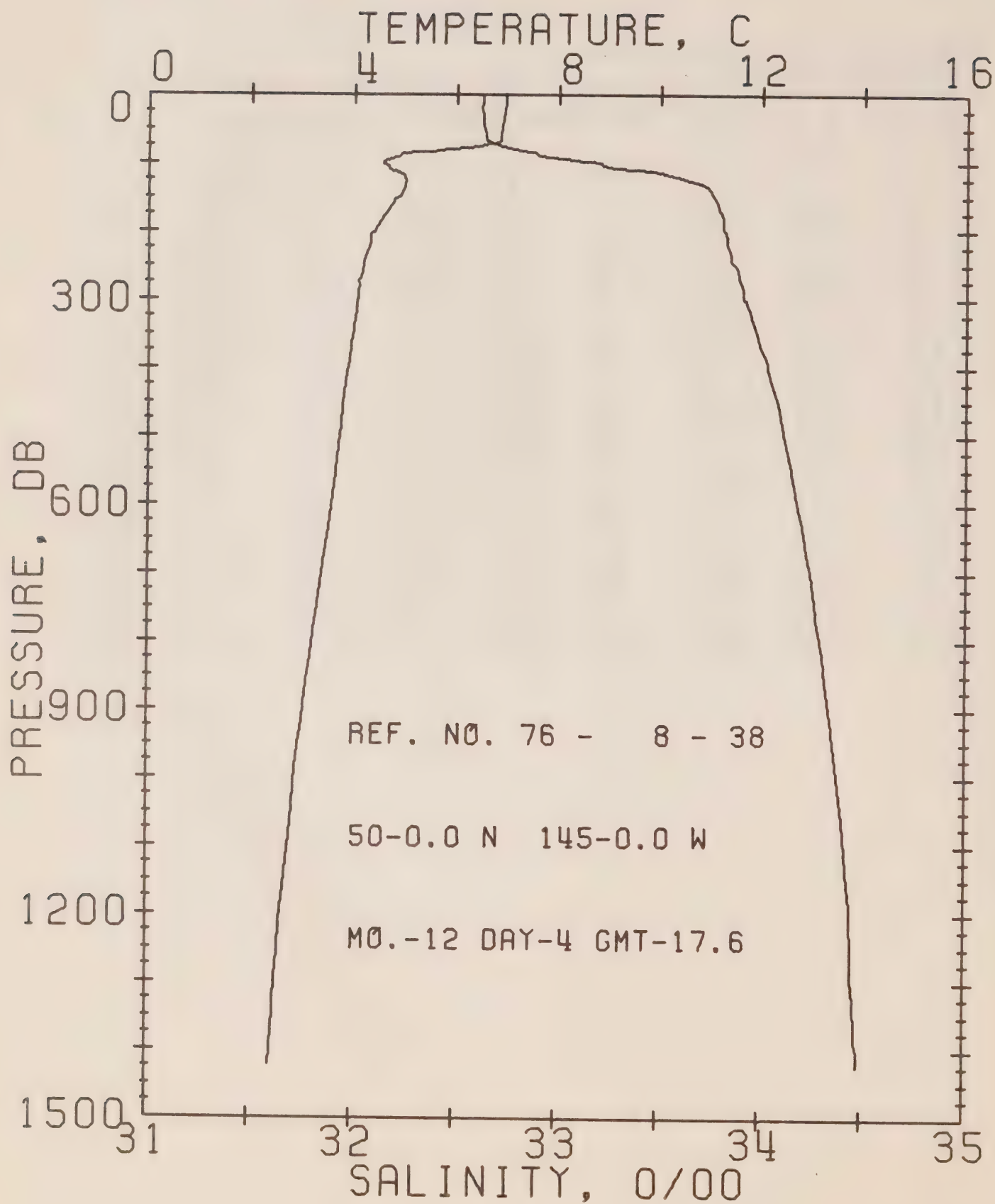
DATE 3/12/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.6

RESULTS OF STP CAST 120 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.01	32.64	0	25.59	241.1	0.0	0.0	1476.
10	7.02	32.63	10	25.58	242.3	0.24	0.01	1476.
20	7.01	32.63	20	25.58	242.3	0.48	0.05	1476.
30	6.98	32.63	30	25.58	242.1	0.73	0.11	1476.
50	6.94	32.63	50	25.59	241.7	1.21	0.31	1477.
75	6.85	32.68	75	25.64	236.8	1.81	0.69	1477.
100	4.62	32.94	99	26.11	192.2	2.33	1.15	1468.
125	4.82	33.46	124	26.50	155.3	2.77	1.65	1470.
150	5.01	33.70	149	26.67	139.5	3.13	2.16	1472.
175	4.84	33.76	174	26.74	133.4	3.47	2.72	1472.
200	4.60	33.79	199	26.79	128.8	3.80	3.35	1471.
225	4.40	33.82	223	26.83	125.2	4.11	4.04	1471.
250	4.23	33.84	248	26.87	121.6	4.42	4.79	1470.
300	4.11	33.92	298	26.94	115.1	5.02	6.45	1471.
400	3.96	34.01	397	27.03	107.4	6.15	10.46	1472.
500	3.79	34.11	496	27.12	99.5	7.18	15.18	1473.
600	3.57	34.18	595	27.20	92.3	8.14	20.57	1474.
800	3.21	34.29	793	27.32	81.8	9.86	32.82	1476.
1000	2.89	34.37	990	27.42	73.6	11.41	47.03	1478.
1200	2.63	34.43	1188	27.49	67.5	12.82	52.73	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 38

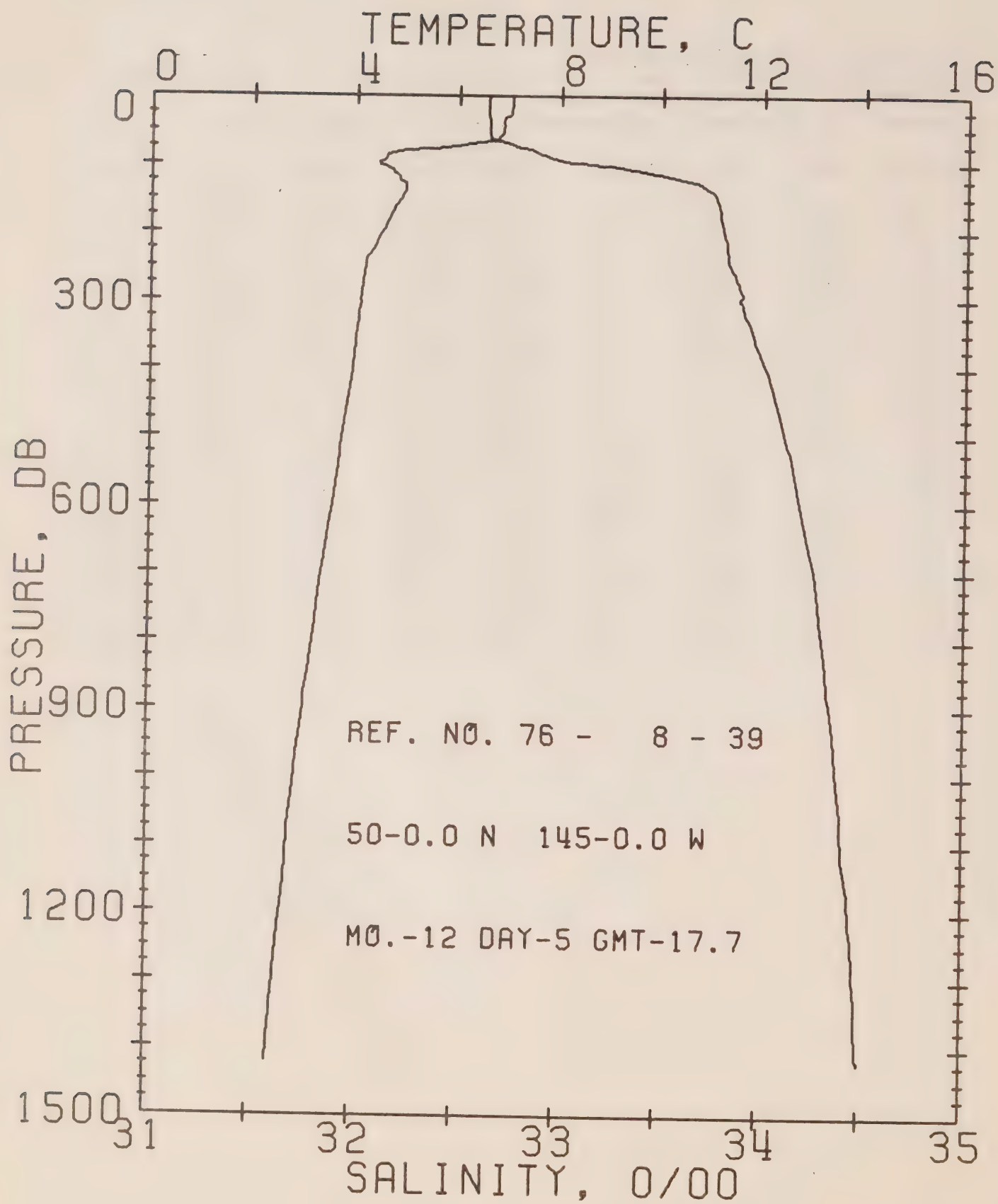
DATE 4/12/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.6

RESULTS OF STP CAST 123 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	6.95	32.63	0	25.59	241.0	0.0	0.0	1476.
10	6.95	32.63	10	25.59	241.4	0.24	0.01	1476.
20	6.94	32.62	20	25.58	242.0	0.48	0.05	1476.
30	6.92	32.63	30	25.59	241.5	0.72	0.11	1476.
50	6.87	32.63	50	25.60	240.7	1.21	0.31	1476.
75	6.46	32.72	75	25.72	229.3	1.80	0.69	1475.
100	4.56	33.21	99	26.33	171.3	2.31	1.13	1468.
125	5.00	33.62	124	26.61	145.6	2.70	1.59	1471.
150	4.89	33.76	149	26.73	134.1	3.05	2.07	1471.
175	4.60	33.80	174	26.79	128.2	3.38	2.61	1471.
200	4.40	33.81	199	26.83	125.1	3.69	3.22	1470.
225	4.27	33.83	223	26.86	122.6	4.00	3.88	1470.
250	4.18	33.86	248	26.89	119.5	4.30	4.62	1470.
300	4.07	33.91	298	26.94	115.5	4.89	6.25	1471.
400	3.89	34.03	397	27.05	105.4	5.99	10.17	1472.
500	3.73	34.11	496	27.13	98.4	7.00	14.83	1473.
600	3.58	34.18	595	27.20	92.5	7.96	20.17	1474.
800	3.21	34.29	793	27.32	81.9	9.70	32.54	1476.
1000	2.87	34.38	990	27.42	73.1	11.25	45.70	1478.
1200	2.61	34.44	1188	27.50	66.6	12.64	62.29	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 39

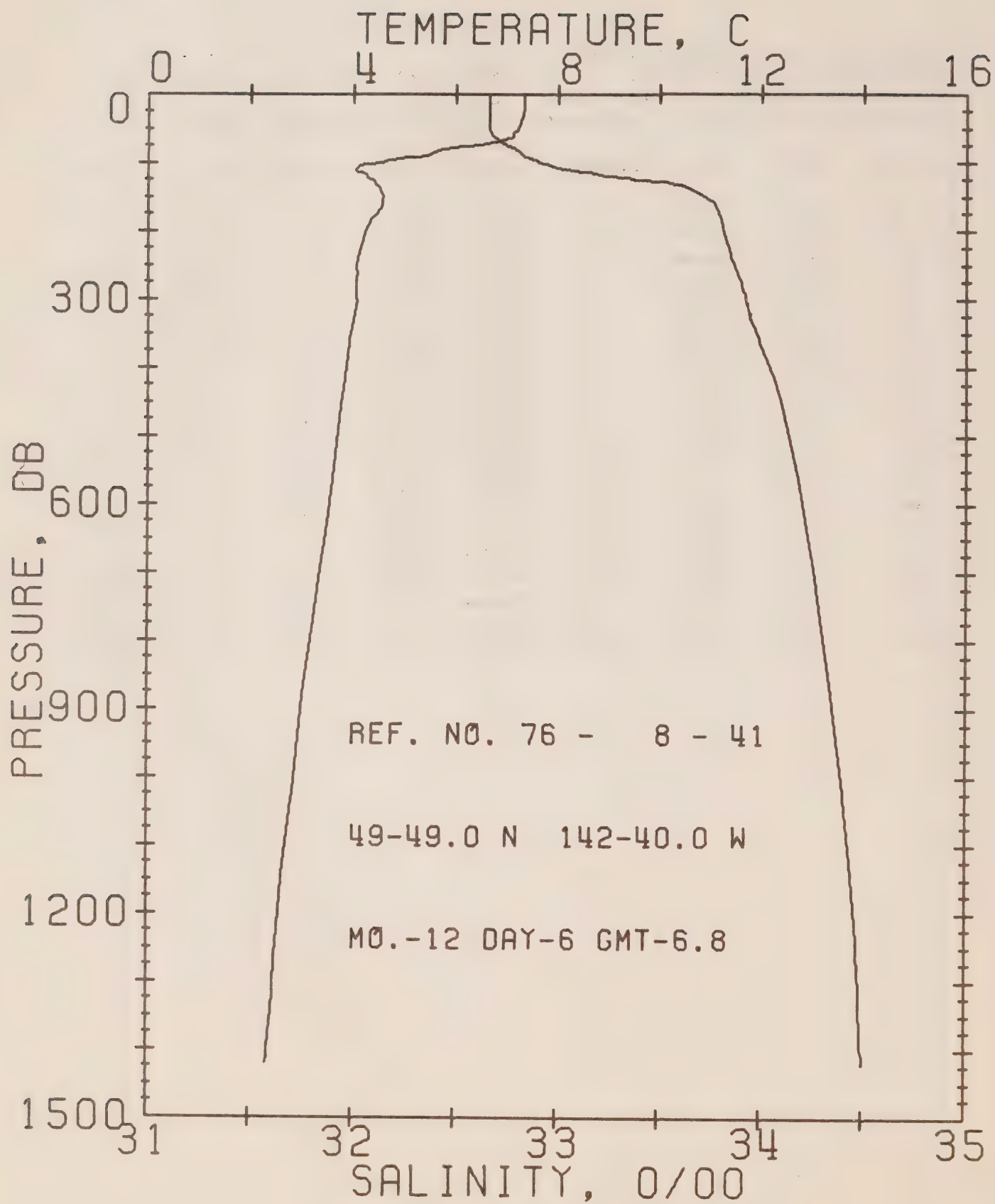
DATE 5/12/76

STATION P

POSITION 50- 0.0N, 145- 0.0W GMT 17.7

RESULTS OF STP CAST 128 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.03	32.65	0	25.59	240.5	0.0	0.0	1476.
10	7.03	32.64	10	25.58	241.6	0.24	0.01	1476.
20	7.02	32.64	20	25.58	241.7	0.48	0.05	1476.
30	6.94	32.64	30	25.59	240.8	0.72	0.11	1476.
50	6.86	32.65	50	25.61	239.2	1.20	0.31	1476.
75	5.77	32.81	75	25.88	214.4	1.79	0.68	1472.
100	4.45	33.13	99	26.28	176.0	2.27	1.11	1468.
125	4.87	33.66	124	26.65	141.1	2.67	1.56	1471.
150	4.87	33.77	149	26.74	133.1	3.01	2.04	1471.
175	4.66	33.79	174	26.78	129.6	3.34	2.58	1471.
200	4.50	33.80	199	26.81	127.0	3.66	3.19	1471.
225	4.33	33.82	223	26.84	124.3	3.97	3.87	1470.
250	4.18	33.84	248	26.87	121.4	4.28	4.61	1470.
300	4.09	33.88	298	26.91	117.9	4.87	6.27	1471.
400	3.94	34.02	397	27.04	106.9	5.99	10.26	1472.
500	3.74	34.12	496	27.13	98.3	7.01	14.95	1473.
600	3.57	34.19	595	27.21	91.5	7.96	20.25	1474.
800	3.19	34.30	793	27.34	80.6	9.67	32.42	1476.
1000	2.87	34.38	990	27.42	73.0	11.20	46.44	1478.
1200	2.62	34.45	1188	27.50	66.3	12.60	62.03	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 41

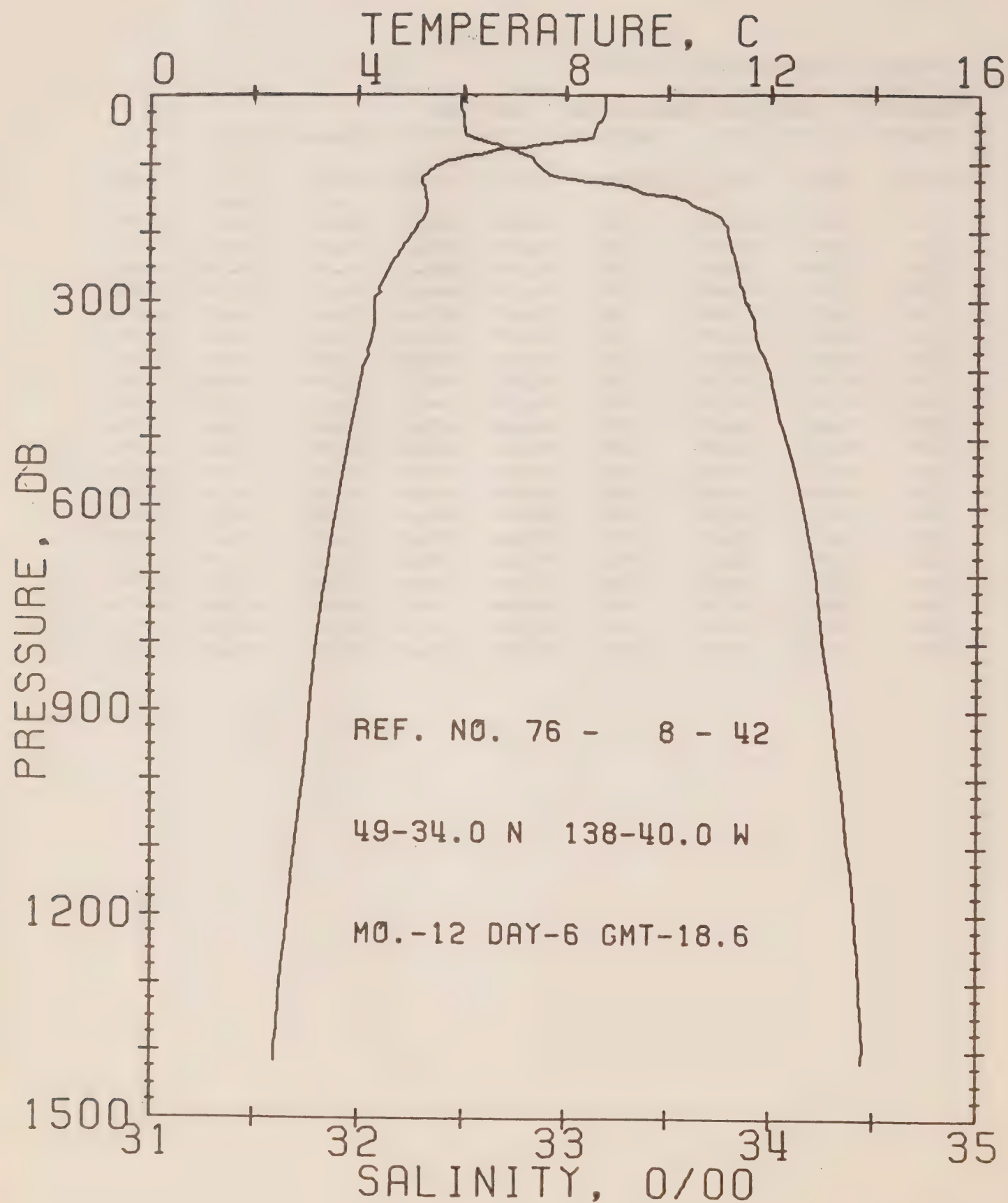
DATE 6/12/76

STATION 12

POSITION 49-49.0N, 142-40.0W GMT 6.8

RESULTS OF STP CAST 99 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.34	32.66	0	25.56	243.8	0.0	0.0	1477.
10	7.34	32.66	10	25.56	244.2	0.24	0.01	1477.
20	7.34	32.66	20	25.56	244.2	0.49	0.05	1478.
30	7.31	32.66	30	25.56	244.1	0.73	0.11	1478.
50	7.20	32.66	50	25.57	243.0	1.22	0.31	1478.
75	6.23	32.75	75	25.77	224.3	1.81	0.69	1474.
100	4.56	32.90	99	26.09	194.6	2.34	1.15	1468.
125	4.40	33.38	124	26.48	157.1	2.75	1.66	1468.
150	4.58	33.72	149	26.73	134.0	3.13	2.15	1470.
175	4.45	33.79	174	26.80	127.5	3.45	2.69	1470.
200	4.23	33.81	199	26.84	123.6	3.77	3.28	1470.
225	4.13	33.84	223	26.88	120.5	4.07	3.95	1470.
250	4.06	33.87	248	26.90	118.2	4.37	4.67	1470.
300	4.05	33.92	298	26.95	114.5	4.95	6.29	1471.
400	3.86	34.04	397	27.06	104.3	6.04	10.19	1471.
500	3.70	34.13	496	27.15	96.5	7.04	14.76	1473.
600	3.53	34.20	595	27.22	90.4	7.98	19.98	1474.
800	3.16	34.30	793	27.34	80.2	9.68	32.09	1475.
1000	2.85	34.39	990	27.44	71.8	11.20	45.96	1478.
1200	2.56	34.46	1188	27.52	64.7	12.56	61.21	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 42

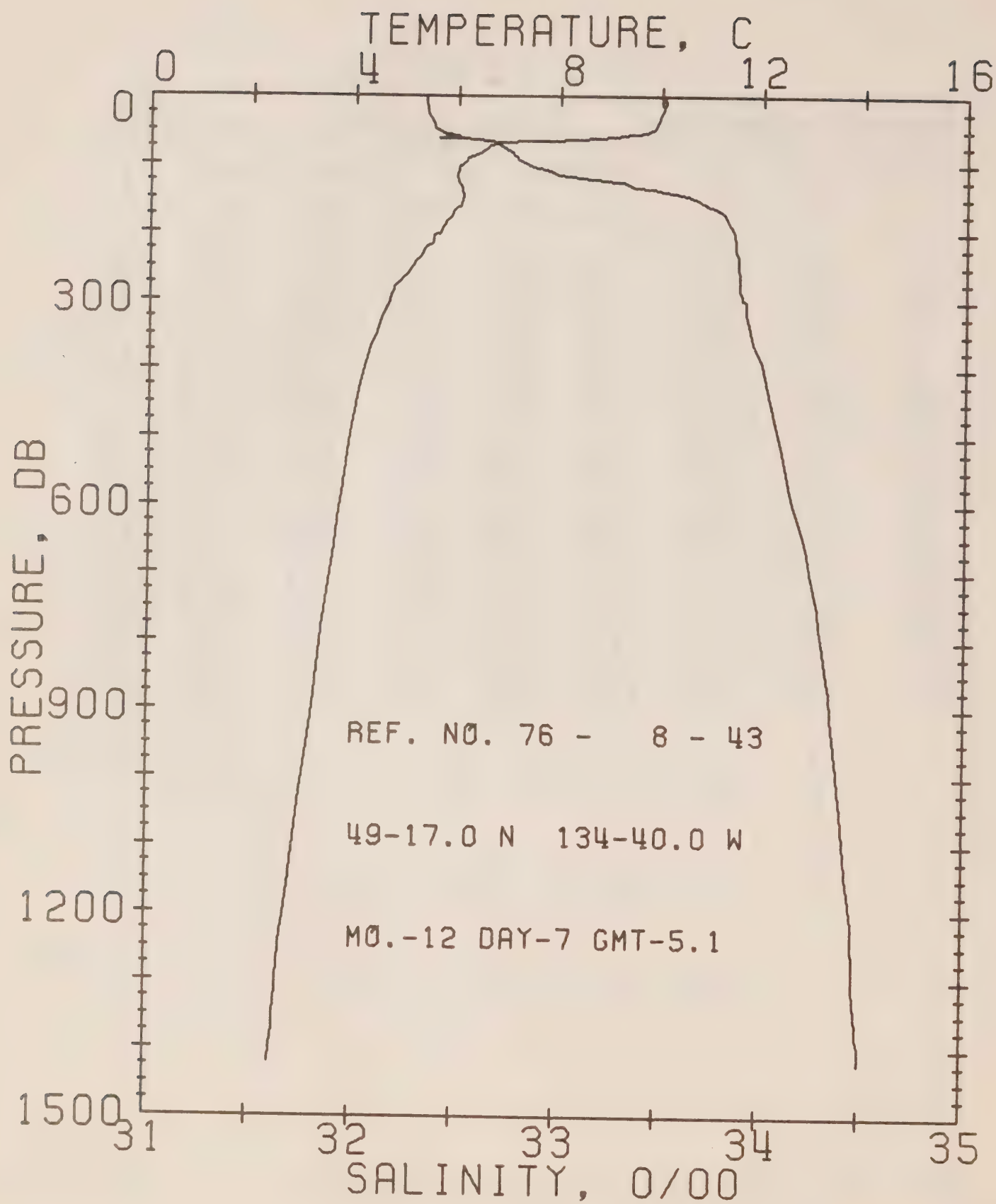
DATE 6/12/76

STATION 10

POSITION 49-34.0N, 138-40.0W GMT 18.6

RESULTS OF STP CAST 129 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.81	32.49	0	25.21	276.8	0.0	0.0	1483.
10	8.81	32.49	10	25.21	277.2	0.28	0.01	1483.
20	8.80	32.49	20	25.21	277.2	0.55	0.06	1483.
30	8.77	32.50	30	25.22	276.3	0.83	0.13	1483.
50	8.58	32.51	50	25.26	273.2	1.38	0.35	1483.
75	7.19	32.70	75	25.61	240.2	2.04	0.77	1478.
100	5.58	32.86	99	25.94	208.6	2.59	1.26	1472.
125	5.19	33.11	124	26.18	185.8	3.09	1.83	1471.
150	5.29	33.55	149	26.52	154.2	3.51	2.42	1473.
175	5.25	33.76	174	26.69	138.3	3.88	3.03	1473.
200	5.04	33.81	199	26.75	132.6	4.22	3.67	1473.
225	4.82	33.83	223	26.79	128.9	4.54	4.38	1472.
250	4.60	33.85	248	26.84	124.9	4.86	5.15	1472.
300	4.29	33.92	298	26.92	117.0	5.47	6.86	1472.
400	4.07	34.01	397	27.02	108.9	6.61	10.93	1472.
500	3.82	34.09	496	27.11	100.9	7.66	15.74	1473.
600	3.59	34.18	595	27.20	92.5	8.63	21.14	1474.
800	3.21	34.28	793	27.32	82.4	10.37	33.50	1476.
1000	2.95	34.37	990	27.41	74.4	11.94	47.85	1478.
1200	2.66	34.44	1188	27.49	67.1	13.35	63.66	1480.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 43

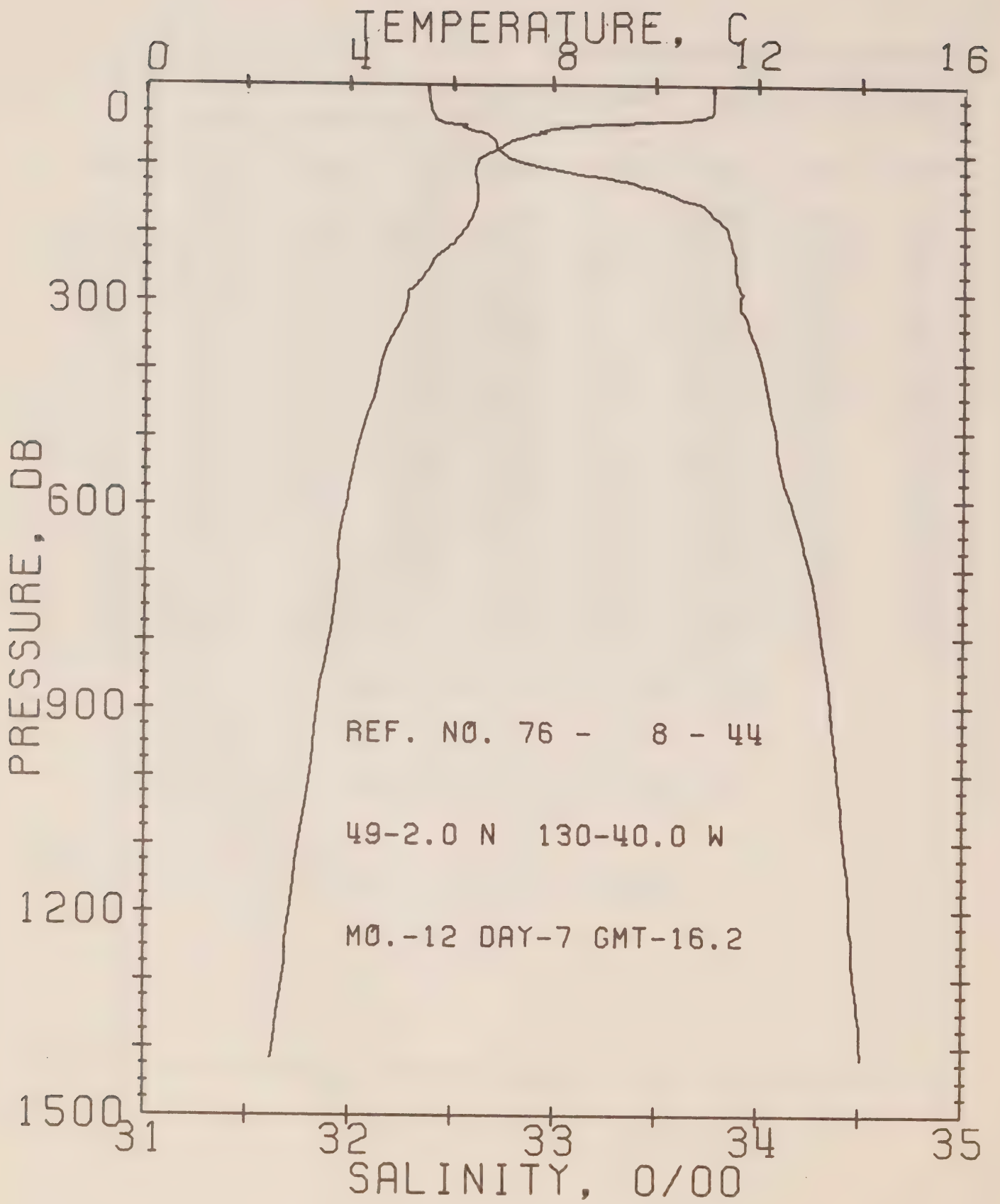
DATE 7/12/76

STATION 8

POSITION 49-17.0N, 134-40.0W GMT 5.1

RESULTS OF STP CAST 126 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.06	32.34	0	24.89	307.0	0.0	0.0	1437.
10	10.07	32.34	10	24.89	307.5	0.31	0.02	1437.
20	10.02	32.35	20	24.91	306.3	0.61	0.06	1437.
30	9.95	32.36	30	24.92	304.9	0.92	0.14	1437.
50	9.82	32.39	50	24.97	300.4	1.53	0.39	1437.
75	6.58	32.72	75	25.70	231.1	2.19	0.81	1476.
100	6.09	32.83	99	25.86	216.7	2.75	1.31	1474.
125	6.00	33.26	124	26.20	184.0	3.26	1.59	1475.
150	6.08	33.66	149	26.51	155.5	3.69	2.48	1476.
175	5.86	33.81	174	26.65	141.8	4.06	3.09	1475.
200	5.65	33.86	199	26.72	135.8	4.40	3.76	1475.
225	5.35	33.87	223	26.76	131.8	4.74	4.48	1475.
250	5.11	33.88	248	26.80	128.7	5.06	5.27	1474.
300	4.67	33.92	298	26.88	121.1	5.69	7.02	1473.
400	4.18	34.01	397	27.00	110.2	6.85	11.16	1473.
500	3.91	34.08	496	27.09	102.4	7.92	16.03	1473.
600	3.72	34.16	595	27.17	95.7	8.91	21.58	1474.
800	3.36	34.30	793	27.32	82.7	10.68	34.15	1476.
1000	3.03	34.38	990	27.41	74.3	12.24	46.43	1478.
1200	2.69	34.45	1188	27.50	66.6	13.65	54.27	1430.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 44

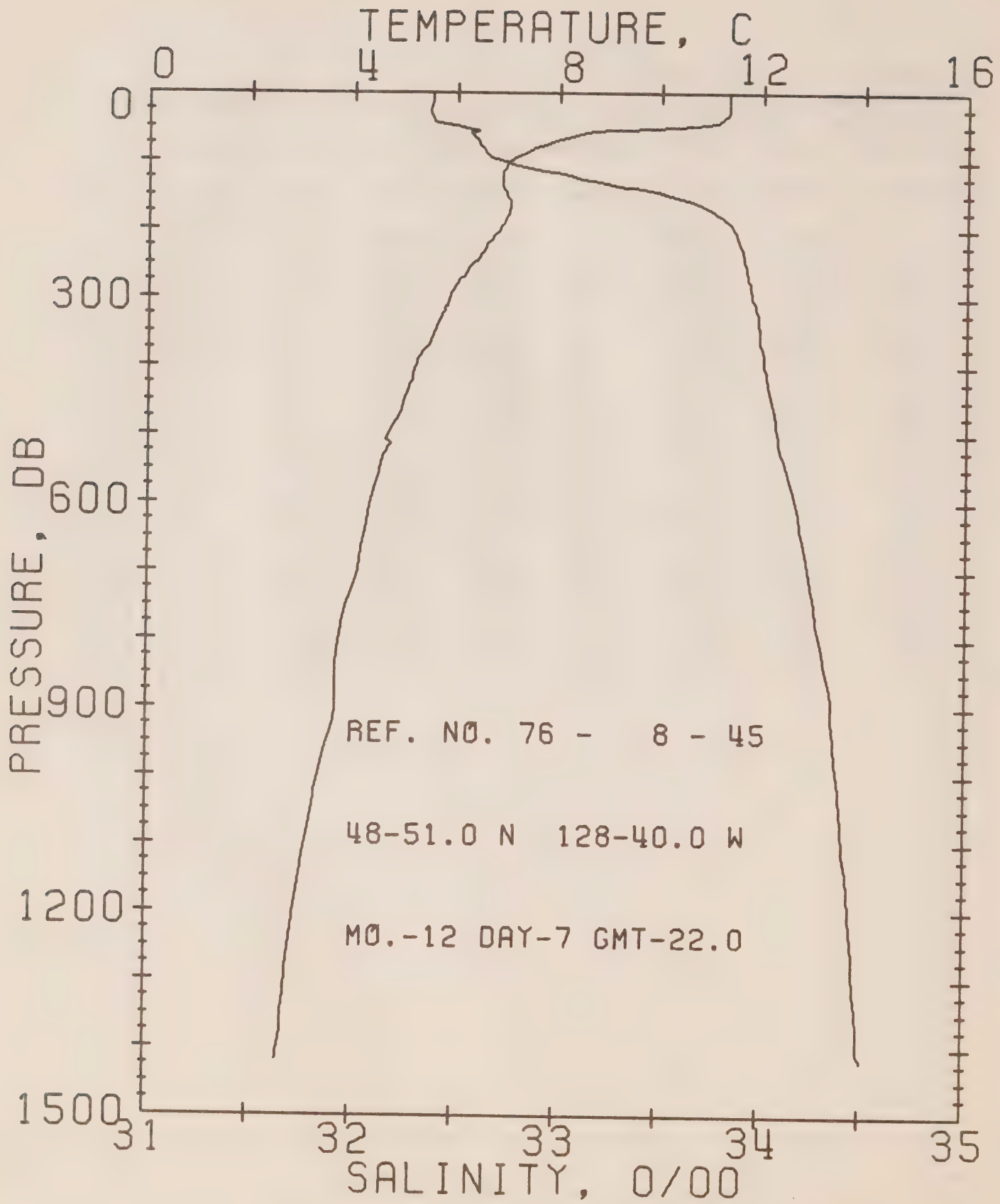
DATE 7/12/76

STATION 6

POSITION 49- 2.0N, 130-40.0W GMT 16.2

RESULTS OF STP CAST 130 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.14	32.37	0	24.73	322.5	0.0	0.0	1491.
10	11.12	32.38	10	24.74	322.1	0.32	0.02	1491.
20	11.12	32.38	20	24.74	321.8	0.64	0.07	1491.
30	11.11	32.39	30	24.75	321.4	0.97	0.15	1492.
50	11.08	32.44	50	24.80	317.4	1.61	0.41	1492.
75	7.39	32.70	75	25.58	243.0	2.27	0.83	1479.
100	6.61	32.76	99	25.73	228.5	2.86	1.35	1476.
125	6.42	33.11	124	26.03	200.4	3.40	1.97	1476.
150	6.47	33.51	149	26.34	171.5	3.86	2.62	1477.
175	6.43	33.73	174	26.52	154.6	4.27	3.29	1478.
200	6.28	33.83	199	26.61	146.1	4.65	4.01	1478.
225	6.00	33.86	223	26.68	140.5	5.01	4.78	1477.
250	5.60	33.88	248	26.74	134.3	5.35	5.61	1476.
300	5.11	33.92	298	26.83	126.2	6.00	7.45	1475.
400	4.58	34.01	397	26.96	114.3	7.22	11.77	1474.
500	4.20	34.08	496	27.06	105.8	8.32	16.82	1475.
600	3.92	34.15	595	27.15	98.1	9.35	22.55	1475.
800	3.59	34.31	793	27.30	84.6	11.15	35.42	1477.
1000	3.21	34.39	991	27.40	75.8	12.75	50.03	1479.
1200	2.82	34.45	1188	27.49	68.2	14.19	66.09	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 45

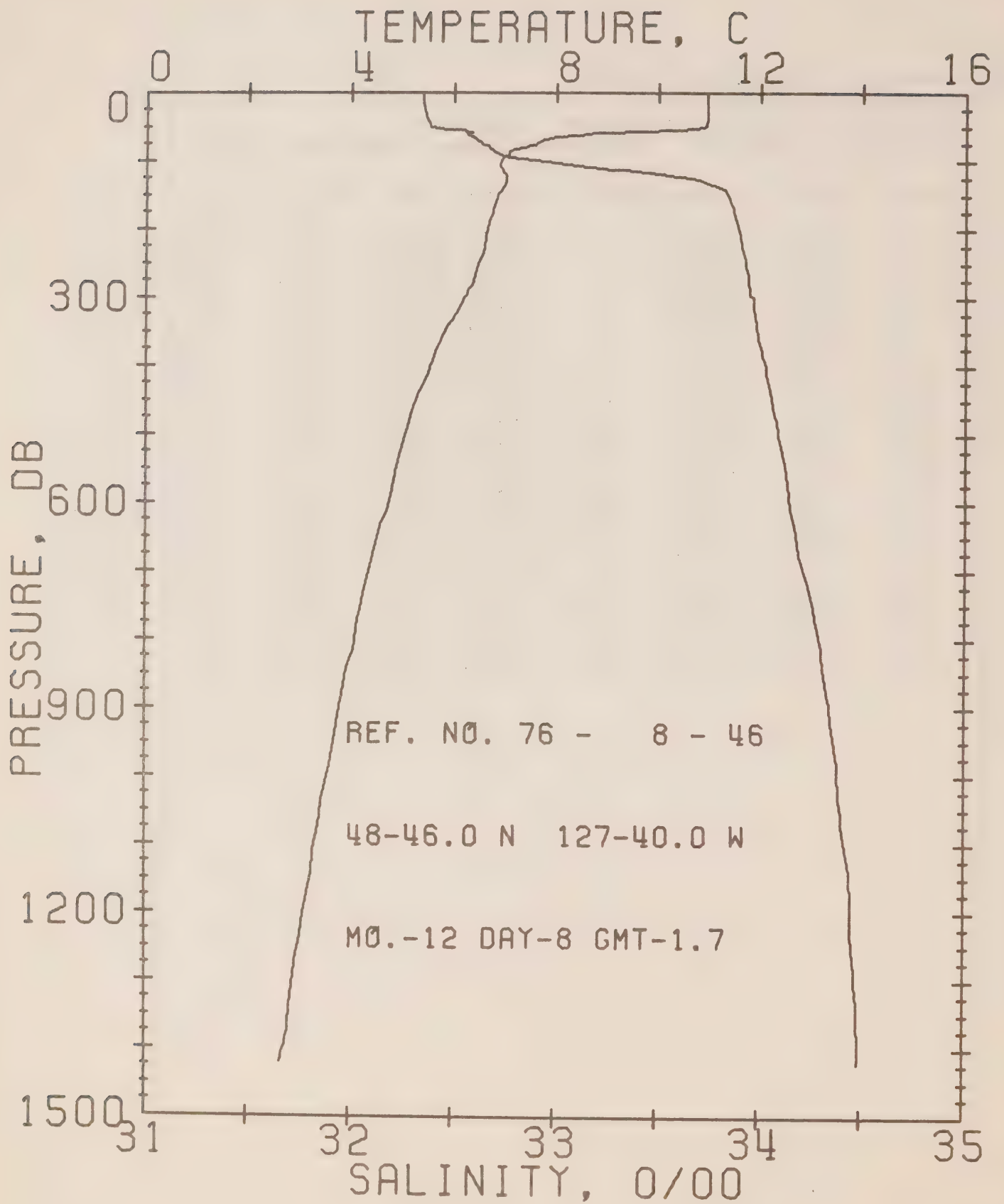
DATE 7/12/76

STATION 5

POSITION 48-51.0N, 128-40.0W GMT 22.0

RESULTS OF STP CAST 138 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	11.33	32.38	0	24.70	325.0	0.0	0.0	1492.
10	11.34	32.38	10	24.70	325.5	0.33	0.02	1492.
20	11.34	32.38	20	24.70	326.1	0.65	0.07	1492.
30	11.32	32.37	30	24.70	326.4	0.98	0.15	1492.
50	10.48	32.50	50	24.95	302.8	1.62	0.41	1490.
75	7.75	32.61	75	25.46	254.6	2.29	0.83	1480.
100	7.03	32.72	99	25.64	237.2	2.90	1.38	1478.
125	6.87	33.11	124	25.97	206.1	3.46	2.02	1478.
150	6.98	33.55	149	26.30	175.3	3.95	2.68	1480.
175	7.01	33.76	174	26.46	160.3	4.35	3.37	1480.
200	6.82	33.85	199	26.56	151.1	4.74	4.11	1480.
225	6.56	33.89	223	26.63	145.3	5.11	4.91	1480.
250	6.31	33.91	248	26.68	141.0	5.47	5.78	1479.
300	5.85	33.95	298	26.77	132.8	6.15	7.69	1478.
400	5.19	34.01	397	26.89	121.5	7.42	12.21	1477.
500	4.66	34.08	496	27.01	111.4	8.58	17.55	1477.
600	4.34	34.17	595	27.11	101.8	9.65	23.54	1477.
800	3.74	34.29	793	27.27	87.8	11.55	37.03	1478.
1000	3.35	34.38	991	27.38	78.2	13.21	52.25	1480.
1200	2.90	34.44	1188	27.47	69.8	14.69	68.78	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 46

DATE 8/12/76

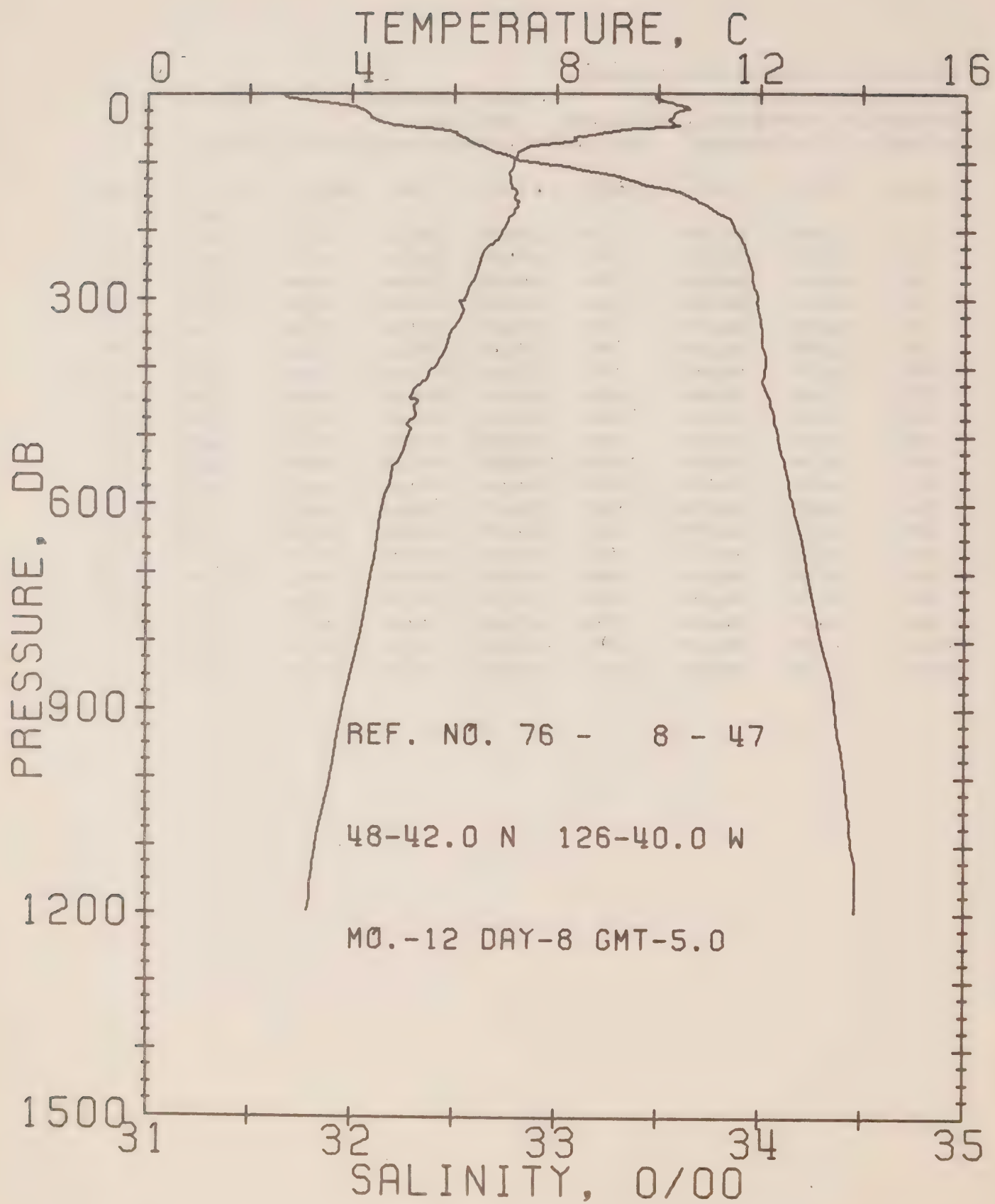
STATION 4

POSITION 48-46.0N, 127-40.0W

GMT 1.7

RESULTS OF STP CAST 125 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.96	32.35	0	24.75	320.9	0.0	0.0	1490.
10	10.96	32.35	10	24.75	321.4	0.32	0.02	1491.
20	10.96	32.35	20	24.75	321.4	0.64	0.07	1491.
30	10.96	32.36	30	24.75	321.2	0.96	0.15	1491.
50	10.87	32.38	50	24.78	318.4	1.60	0.41	1491.
75	7.58	32.64	75	25.51	249.8	2.29	0.84	1479.
100	6.89	32.92	99	25.82	220.3	2.88	1.37	1478.
125	7.01	33.66	124	26.39	166.7	3.36	1.91	1479.
150	6.84	33.84	149	26.55	151.8	3.75	2.46	1479.
175	6.74	33.87	174	26.59	148.5	4.13	3.08	1479.
200	6.64	33.89	199	26.62	145.8	4.49	3.79	1479.
225	6.59	33.91	223	26.64	144.2	4.86	4.57	1480.
250	6.46	33.93	248	26.67	141.4	5.21	5.44	1430.
300	6.19	33.97	298	26.74	135.7	5.91	7.39	1479.
400	5.53	34.03	397	26.87	124.1	7.21	12.03	1478.
500	5.03	34.09	496	26.98	114.7	8.41	17.49	1478.
600	4.73	34.14	595	27.05	108.0	9.52	23.71	1479.
800	4.07	34.29	793	27.24	91.4	11.50	37.83	1479.
1000	3.54	34.38	991	27.37	80.1	13.21	53.45	1480.
1200	3.11	34.45	1188	27.46	71.5	14.72	70.39	1482.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 47

DATE 8/12/76

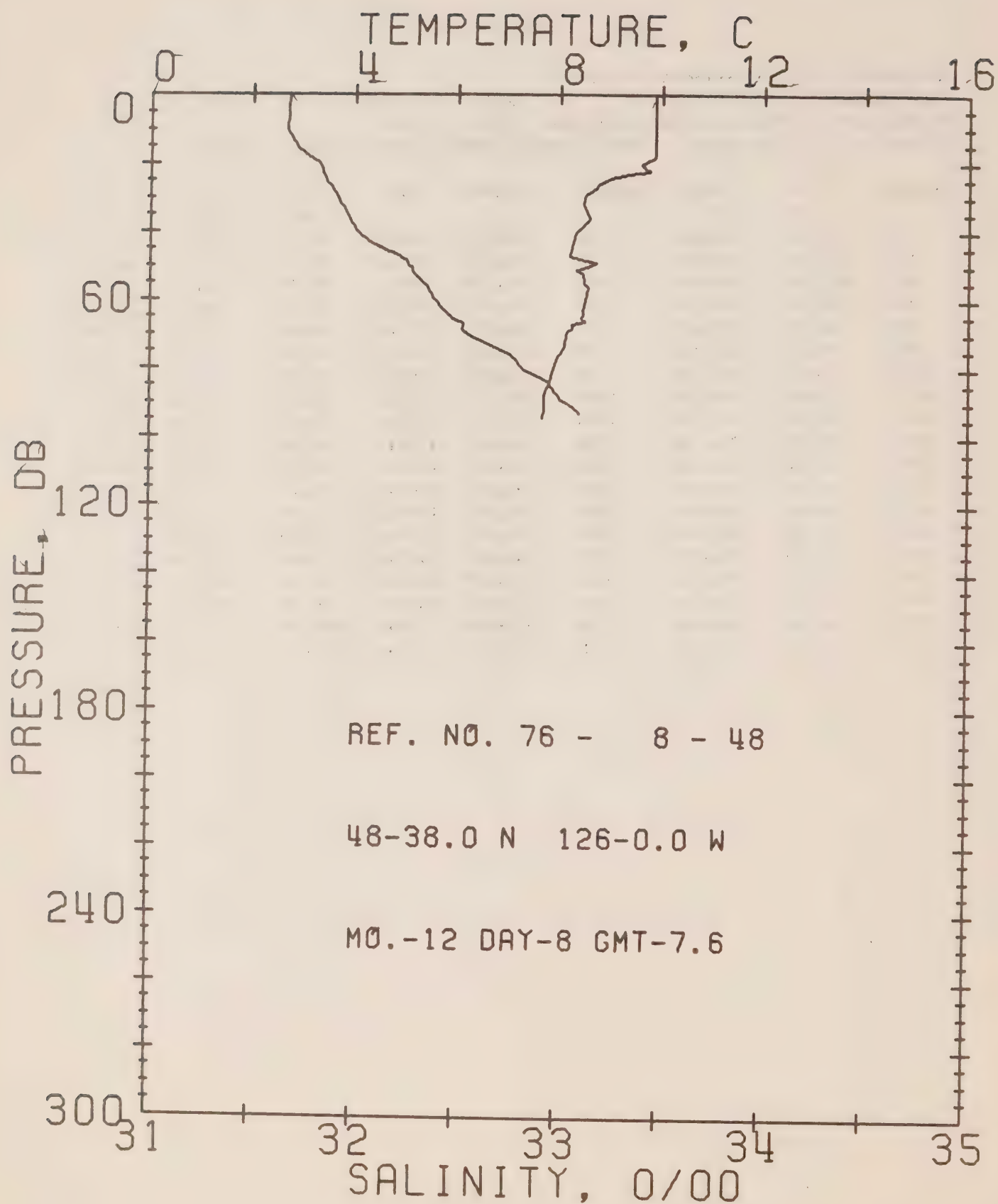
STATION 3

POSITION 48-42.0N, 126-40.0W

GMT 5.0

RESULTS OF STP CAST 146 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	9.95	31.66	0	24.38	355.7	0.0	0.0	1486.
10	10.06	31.79	10	24.46	348.2	0.35	0.02	1487.
20	10.58	32.02	20	24.55	339.7	0.70	0.07	1489.
30	10.28	32.08	30	24.65	330.5	1.03	0.16	1488.
50	9.69	32.34	50	24.95	302.4	1.68	0.42	1487.
75	7.63	32.61	75	25.48	252.7	2.36	0.85	1480.
100	7.14	32.87	99	25.75	226.9	2.96	1.39	1478.
125	7.09	33.35	124	26.13	191.1	3.48	1.98	1479.
150	7.17	33.65	149	26.36	163.9	3.93	2.61	1480.
175	7.14	33.80	174	26.48	159.1	4.34	3.29	1481.
200	6.92	33.88	199	26.57	150.7	4.73	4.02	1481.
225	6.63	33.92	224	26.64	143.9	5.10	4.82	1480.
250	6.47	33.95	248	26.69	140.2	5.45	5.68	1480.
300	6.21	33.99	298	26.75	134.4	6.14	7.60	1479.
400	5.59	34.03	397	26.86	125.1	7.44	12.24	1479.
500	5.09	34.09	496	26.97	115.7	8.64	17.75	1478.
600	4.61	34.16	595	27.08	105.5	9.74	25.92	1478.
800	4.14	34.30	793	27.24	91.4	11.71	37.91	1480.
1000	3.58	34.42	991	27.39	78.0	13.39	53.28	1481.



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 48

DATE 8/12/76

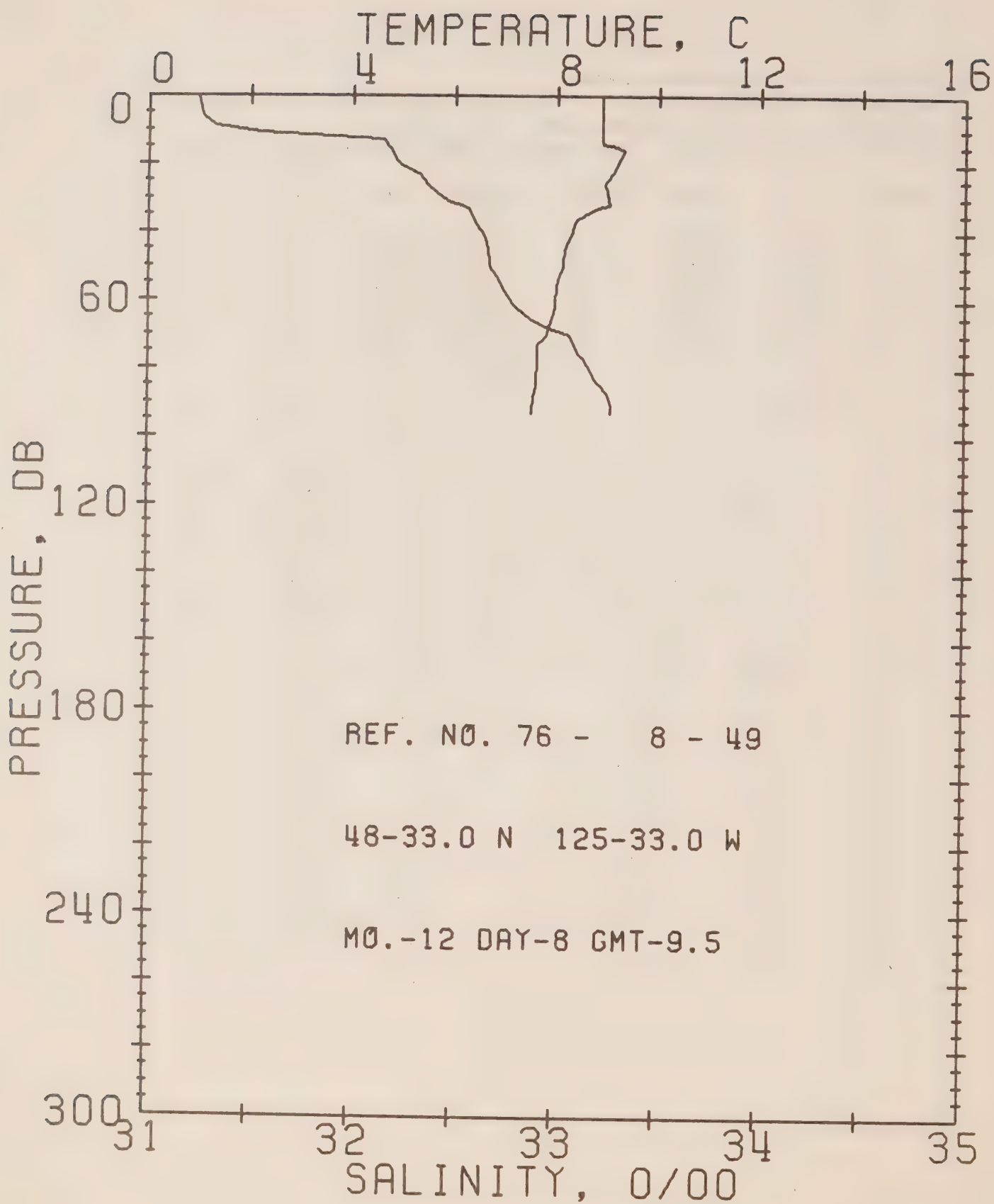
STATION 2

POSITION 48-38.0N, 126- 0.0W GMT 7.6

RESULTS OF STP CAST 45 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. EN	SOUND
0	9.87	31.68	0	24.41	353.0	0.0	0.0	1486.
10	9.37	31.67	10	24.40	354.0	0.35	0.02	1486.
20	9.36	31.82	20	24.57	338.4	0.70	0.07	1485.
30	8.49	31.91	30	24.80	316.0	1.03	0.15	1431.
50	8.54	32.26	50	25.07	291.1	1.64	0.40	1432.
75	8.03	32.71	75	25.50	250.4	2.35	0.84	1431.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	9.87	31.68	55.	8.49	32.33
11.	9.87	31.67	56.	8.50	32.35
14.	9.87	31.70	60.	8.51	32.39
16.	9.87	31.72	63.	8.46	32.43
18.	9.87	31.77	64.	8.45	32.45
20.	9.56	31.82	65.	8.44	32.47
22.	9.75	31.84	66.	8.51	32.49
23.	9.35	31.84	67.	8.24	32.53
24.	8.99	31.85	68.	8.25	32.53
26.	8.76	31.87	69.	8.17	32.52
27.	8.72	31.88	70.	8.13	32.55
29.	8.50	31.90	73.	8.10	32.64
32.	8.46	31.93	74.	8.09	32.68
33.	8.48	31.94	76.	7.98	32.75
36.	8.59	31.97	81.	7.88	32.83
40.	8.32	32.01	84.	7.80	32.94
43.	8.27	32.06	86.	7.73	32.96
46.	8.22	32.17	88.	7.72	32.99
47.	8.20	32.20	90.	7.72	33.01
49.	8.72	32.25	91.	7.71	33.04
50.	8.54	32.26	92.	7.71	33.07
51.	8.33	32.28	94.	7.69	33.10
52.	8.46	32.28			



OFFSHORE OCEANOGRAPHY GROUP

REFERENCE NO. 76- 8- 49

DATE 8/12/76

STATION 1

POSITION 48-33.0N, 125-33.0W GMT 9.5

RESULTS OF STP CAST 42 POINTS TAKEN FROM ANALOG TRACE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	PCT. SN	SOUND
0	3.89	31.24	0	24.22	371.0	0.0	0.0	1481.
10	3.89	31.43	10	24.37	356.8	0.37	0.02	1482.
20	9.19	32.23	20	24.95	302.3	0.55	0.07	1484.
30	9.01	32.44	30	25.14	284.2	0.97	0.14	1484.
50	3.14	32.67	50	25.45	254.9	1.50	0.35	1481.
75	7.64	33.10	75	25.86	216.3	2.10	0.73	1480.

DEPTH	TEMP	SAL	DEPTH	TEMP	SAL
0.	8.89	31.24	45.	8.17	32.66
6.	8.89	31.26	49.	8.14	32.67
9.	8.89	31.32	50.	8.14	32.67
11.	8.89	31.55	53.	8.06	32.70
13.	8.88	32.15	56.	8.01	32.73
14.	8.88	32.16	61.	7.97	32.78
15.	9.16	32.17	62.	7.97	32.80
16.	7.33	32.19	65.	7.92	32.87
19.	9.22	32.21	66.	7.90	32.89
20.	9.19	32.23	68.	7.85	32.96
23.	9.09	32.32	70.	7.81	33.06
26.	8.92	32.36	73.	7.64	33.08
28.	8.98	32.40	75.	7.64	33.10
31.	9.02	32.46	77.	7.63	33.13
32.	9.03	32.53	79.	7.63	33.15
33.	8.81	32.56	83.	7.61	33.18
35.	8.55	32.58	85.	7.59	33.22
36.	8.40	32.59	88.	7.55	33.25
38.	8.35	32.61	90.	7.54	33.26
41.	8.28	32.64	91.	7.53	33.27
42.	8.24	32.65	93.	7.51	33.27

Surface Salinity and Temperature Observations
(P-76-8)

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 8

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
76	10	22	2300	31.933b	11.0	125-33
76	10	23	30	31.707b	10.7	126- 0
76	10	23	300	32.125b	13.9	126-40
76	10	23	600	32.500b	14.4	127-40
76	10	23	1010	32.332b	13.2	128-40
76	10	23	1410	32.452b	13.1	129-40
76	10	23	1700	32.330b	13.0	130-40
76	10	23	2030	32.370b	12.6	131-40
76	10	23	2305	32.381b	13.1	132-40
76	10	24	300	32.282b		133-40
76	10	24	530	32.260b		134-40
76	10	24	900	32.310b		135-40
76	10	24	1145	32.353b	11.4	136-40
76	10	24	1440	32.323b		137-40
76	10	24	1730	32.406b	10.2	138-40
76	10	24	2020	32.414b		139-40
76	10	24	2320	32.487b	10.6	140-40
76	10	25	215	32.453b		141-40
76	10	25	510	32.632b	10.1	142-40
76	10	25	1015	32.614b		143-40
76	10	26	0	32.621b	9.9	ON STATION
76	11	1	0	32.650b	8.7	ON STATION
76	11	2	0	32.642b	8.5	ON STATION
76	11	3	0	32.652	8.5	ON STATION
76	11	4	0	32.623b	8.4	ON STATION
76	11	5	0	32.628	8.3	ON STATION
76	11	6	0	32.647b	8.5	ON STATION
76	11	7	0	32.721b	8.3	ON STATION
76	11	8	0	32.663b	8.0	ON STATION
76	11	9	0	32.636b	8.1	ON STATION
76	11	10	0	32.565b	8.0	ON STATION
76	11	11	0	32.652	7.9	ON STATION
76	11	12	0	32.662b	8.0	ON STATION
76	11	12	0	32.662b	8.0	ON STATION
76	11	13	0	32.646b	7.7	ON STATION
76	11	14	0	32.666b	7.6	ON STATION
76	11	15	0	32.675b		ON STATION
76	11	16	0	32.723b	7.3	ON STATION
76	11	17	0	32.732b	7.2	ON STATION
76	11	18	0	32.687b	7.3	ON STATION
76	11	19	0	32.676b	7.0	ON STATION
76	11	20	0	32.677b	7.0	ON STATION
76	11	21	0	32.665b	7.0	ON STATION
76	11	22	0	32.658b	6.9	ON STATION

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 8

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DAY	GMT	0/00	C	WEST
76	11	23	0	32.661b		143-40
76	11	23	245	32.695b	7.5	142-40
76	11	23	530	32.656b		141-40
76	11	23	810	32.573b	8.4	140-40
76	11	23	1040	32.519b		139-40
76	11	23	1350	32.503b	8.9	138-40
76	11	23	1635	32.477b		137-40
76	11	23	1950	32.431b	9.6	136-40
76	11	23	2240	32.355b		135-40
76	11	24	200	32.258b	10.1	134-40
76	11	24	430	32.272b		133-40
76	11	24	740	32.335b	11.2	132-40
76	11	24	1050	32.377b		131-40
76	11	24	1400	32.376b	11.6	130-40
76	11	24	1705	32.288b		129-40
76	11	24	2030	32.344b	11.9	128-40
76	11	25	0	32.356b	11.4	127-40
76	11	25	310	32.245b	11.3	126-40
76	11	25	520	32.796b	11.0	126- 0
76	11	25	655	32.239b	9.7	125-33
76	11	28	440	30.996b	10.0	125-33
76	11	28	600	30.041b	10.0	126- 0
76	11	28	745	32.291b	10.8	126-40
76	11	28	745	32.291b	10.8	126-40
76	11	28	1040	32.417b	11.5	127-40
76	11	28	1330	32.321b	10.9	128-40
76	11	28	1625	32.307b	11.2	129-40
76	11	28	1910	32.428b	11.4	130-40
76	11	28	2150	32.355b	11.2	131-40
76	11	29	105	32.367b	10.8	132-40
76	11	29	345	32.344b	10.3	133-40
76	11	29	650	32.358b	10.2	134-40
76	11	29	1000	32.372b	9.6	135-40
76	11	29	1315	32.459b	9.2	136-40
76	11	29	1315	32.459b	9.2	136-40
76	11	29	1555	32.518b	9.0	137-40
76	11	29	1900	32.481b	8.7	138-40
76	11	29	2150	32.515b	8.4	139-40
76	11	30	100	32.551b	8.4	140-40
76	11	30	330	32.610b		141-40
76	11	30	700	32.668b	7.2	142-40
76	11	30	1420	32.343b		143-40
76	12	1	0	32.617b	7.0	ON STATION
76	12	2	0	32.672b	7.0	ON STATION

SURFACE SALINITY AND TEMPERATURE OBSERVATIONS
CRUISE REFERENCE NUMBER 76- 8

DATE/TIME				SALINITY	TEMP	LONGITUDE
YR	MO	DY	GMT	0/00	C	WEST
76	12	3	0	32.672b	7.1	ON STATION
76	12	4	0	32.635b	7.0	ON STATION
76	12	5	0	32.578b	7.0	ON STATION
76	12	5	2325	32.634b	6.8	143-40
76	12	6	410	32.644b	7.4	142-40
76	12	6	1100	32.552b	8.4	141-40
76	12	6	1330	32.514b	8.4	140-40
76	12	6	1555	32.475b	8.4	139-40
76	12	6	1830	32.517b	8.8	138-40
76	12	6	2200	32.502b	9.0	137-40
76	12	7	0	32.384b	9.3	136-40
76	12	7	235	32.333b	9.9	135-40
76	12	7	500	32.294b	10.0	134-40
76	12	7	845	32.325b	10.2	133-40
76	12	7	1105	32.319b	10.9	132-40
76	12	7	1340	32.383b	11.2	131-40
76	12	7	1605	32.402b	11.2	130-40
76	12	7	1940	32.423b	11.7	129-40
76	12	7	2200	32.393b	11.3	128-40
76	12	8	135	32.353b	10.9	127-40
76	12	8	455	31.650b	10.1	126-40
76	12	8	730	31.622b	9.7	126- 0
76	12	8	930	31.113b	9.0	125-33

b DENOTES SALINITY SAMPLE TAKEN FROM A
BUCKET. ALL OTHER SAMPLES TAKEN FROM
THE SEAWATER LOOP

ERRATA

Ocean Station "P" Data Record Series

Fisheries Research Board of Canada Technical Report No. 154 (Volume 41)

Hydrographic cast Ref. No. 69-4-155. Delete entire cast.

Fisheries Research Board of Canada Technical Report No. 184 (Volume 42)

Hydrographic cast Ref. No. 69-5-14. Date should read 01/07/69.

Pacific Marine Science Report 72-15 (Volume 54)

STP cast Ref. No. 72-6-1. Suggest subtract 0.11 ‰ from all salinity values.
STP cast Ref. No. 72-6-2. Suggest subtract 0.11 ‰ from all salinity values.
STP cast Ref. No. 72-6-4. Delete all salinity values.
STP cast Ref. No. 72-6-5. Suggest subtract 0.07 ‰ from all salinity values.
STP cast Ref. No. 72-6-6. Suggest subtract 0.04 ‰ from all salinity values.

Pacific Marine Science Report 74-6 (Volume 59)

Hydrographic cast Ref. No. 74-2-8. Time should read 18.0.
Hydrographic cast Ref. No. 74-2-8. Salinity at 50 db possibly too low.
Hydrographic cast Ref. No. 74-2-13. Time should read 17.8.
Hydrographic cast Ref. No. 74-2-19. Time should read 17.8.

Pacific Marine Science Report 74-10 (Volume 60)

Hydrographic cast Ref. No. 74-6-26. Salinity at 0 & 10 db possibly too high.
Salinity at 20 & 30 db possibly too low.

Pacific Marine Science Report 75-6 (Volume 63)

Hydrographic cast Ref. No. 74-9-11. Salinity at 30 db interpolated too low.
Hydrographic cast Ref. No. 74-9-17. Salinity at 65 db possibly too low.
Hydrographic cast Ref. No. 74-9-23. Salinity at 45 db interpolated too low.

Pacific Marine Science Report 76-1 (Volume 64)

Hydrographic cast Ref. No. 75-1-6. Salinity at 77 db possibly should read 32.659 ‰.
Hydrographic cast Ref. No. 75-1-9. Salinity at 76 db possibly should read 32.653 ‰.
Hydrographic cast Ref. No. 75-1-27. Salinity at 29 db possibly should read 32.649 ‰.
Hydrographic cast Ref. No. 75-1-27. Salinity at 49 db possibly should read 32.653 ‰.
STP cast Ref. No. 75-1-30. Delete entire cast.
STP cast Ref. No. 75-1-32. Delete entire cast.

Pacific Marine Science Report 76-2 (Volume 65)

Hydrographic cast Ref. No. 75-2-29. Salinity at 30 db possibly too low.

Pacific Marine Science Report 76-3 (Volume 66)

Hydrographic cast Ref. No. 75-3-4. Salinity at 63 and 85 db probably reversed.

Pacific Marine Science Report 76-13 (Volume 67)

Hydrographic cast Ref. No. 75-4-17. Salinity values appear to be too high.

Pacific Marine Science Report 76-14 (Volume 68)

STP cast Ref. No. 75-5-8. Longitude should read 134-40.0 W.

1. 10. 1910
2. 10. 1910
3. 10. 1910

